

# **Public Reporting as a Quality Improvement Strategy: A Systematic Review of the Multiple Pathways Public Reporting May Influence Quality of Health Care**

## **Appendixes**

## Appendix A. Literature Search Databases and Strings

### List of Electronic Database for Searches

Name	Platform Provider
<b>Primary Search</b>	
Medline	OvidSP
Current Index to Nursing and Allied Health Literature (CINAHL)	EBSCO
PsycINFO	OvidSP
Embase	Embase
Econlit	EBSCO
EBM Reviews: Cochrane Database of Systematic Reviews (CDSR)  Database of Abstracts of Reviews of Effects (DARE)  National Health Service Economic Evaluation Database (NHS EED)  Health Economic Evaluations Database (HEED)	OvidSP
Business Source Premier	EBSCO
Public Affairs Information Service (PAIS)	ProQuest CSA
EPOC Register of Studies	Cochrane Effective Practice and Organisation of Care Group
<b>Grey Literature</b>	
NYAM Grey Literature Database	New York Academy of Medicine Library
Conference Papers	ProQuest CSA
AARP Ageline	OvidSP

### Specific Searches

## Medline/CINAHL Search

**Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) 1947 to May Week 2 2011 and  
Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations May 18, 2011**

Date Searched: 05/18/2011

1	Benchmarking/ or Information Services/ or Information Dissemination/ or Disclosure/ or Access to Information/ or Mandatory Reporting/
2	Quality indicators, health care/ or Quality assurance, health care/ or Quality improvement/ or "process assessment (health care)"/ or "outcome assessment (health care)"/ or (quality adj2 indicator\$).ti,ab.
3	1 or 2
4	exp Hospitals/ or exp Physicians/ or Nursing Homes/ or Home Care Services/ or Competitive Medical Plans/ or Health Maintenance Organizations/ or Managed Care Programs/ or Insurance, Health/ or Medicare/ or Medicaid/ or Hospices/ or Ambulatory Care/ or Skilled Nursing Facilities/ or Group Practice/ or exp Primary Health Care/ or Institutional Practice/ or Private Practice/ or Family Practice/ or Physicians, Family/ or Professional Practice/ or Allied Health Personnel/ or Outpatient clinics, hospital/ or Academic Medical Center/ or Health Care Sector/ or Hospital Administration/ or Public Health Administration/ or Long Term Care Facilit\$.ti,ab. or health care cent\$3.ti,ab. or health care provider\$.ti,ab. or (coronary or cardiac or cardiolog\$).ti,ab.
5	((Dissem\$ or Disclos\$ or Profil\$ or Inform\$ or Indicator\$ or Metric\$ or Rank\$ or Compar\$ or Score\$ or Rating\$ or Rate\$ or data or measure\$ or criteria or standard\$ or account\$ or report\$ or release\$ or initiative\$ or Star) adj5 (Performan\$ or assessment\$ or evaluat\$ or quality or public\$ or consumer\$ or patient\$ or transparen\$ or provider\$)) or score card\$ or (quality adj2 report\$) or report card\$ or league table\$ or (star adj2 rating) or (Star adj2 performance)).ti,ab.
6	Consumer Participation/ or Consumer Advocacy/ or Consumer Satisfaction/ or Patient Satisfaction/ or Decision Making/ or Choice Behavior/ or Attitude of Health Personnel/ or Physician's Practice Patterns/ or Nurse's Practice Patterns/ or Professional Practice/ or Guideline Adherence/ or Patient Selection/ or Patient Participation/ or Hospital Mortality/ or (decision\$ or choice\$ or choos\$ or behav\$ or patient outcome\$).ti,ab.
7	(Medicare Compare or nursing home compare or Calhospital Compare or California State Report Card or California Hospital Outcomes or myhealthcareadvisor or Massachusetts Health Quality or (Pennsylvania adj3 coronary) or (Hospital Quality adj2 Safety Survey) or Home health Compare or Physician Compare or (New York adj2 Cardiac adj2 Report\$) or (New York adj5 surg\$) or Cleveland Health Quality Choice or (HCFA adj5 mortality) or (HCFA adj5 death) or Federal employee health benefit guide or QualityCounts or CAHPS or HEDIS).ti,ab.
8	3 and 4 and 5 and 6
9	7 or 8
10	limit 9 to yr="1980 -Current"
11	remove duplicates from 10

12	limit 11 to (comment or editorial or letter)
13	11 not 12

# **Ovid PsycINFO 1806 to May Week 1 2011**

**Date Searched: 05/10/2011**

1	information/
2	"quality of services"/ or quality of care/ or quality control/ or (quality adj2 indicator\$).ti,ab.
3	1 or 2
4	Consumer attitudes/ or Client attitudes/ or Patients/ or Consumer Behavior/ or job performance/ or consumer satisfaction/ or (decision\$ or choice\$ or choos\$ or behav\$ or patient outcome\$).ti,ab.
5	exp Hospitals/ or exp Physicians/ or Nursing Homes/ or exp allied health personnel/ or clinicians/ or outpatient treatment/ or home visiting programs/ or Health Maintenance Organizations/ or Managed Care/ or Medicare/ or Medicaid/ or health insurance/ or Palliative Care/ or private practice/ or health care delivery/ or health care services/ or facilities/ or primary health care/ or public health services/ or long term care/ or Long Term Care Facilit\$.ti,ab. or health care cent\$3.ti,ab. or health care provider\$.ti,ab. or (coronary or cardiac or cardiolog\$).ti,ab.
6	((Dissem\$ or Disclos\$ or Profil\$ or Inform\$ or Indicator\$ or Metric\$ or Rank\$ or Compar\$ or Score\$ or Rating\$ or Rate\$ or data or measure\$ or criteria or standard\$ or account\$ or report\$ or release\$ or initiative\$ or Star) adj5 (Performan\$ or assessment\$ or evaluat\$ or quality or public\$ or consumer\$ or patient\$ or transparen\$ or provider\$) or score card\$ or (quality adj2 report\$) or report card\$ or league table\$ or (star adj2 rating) or (Star adj2 performance)).ti,ab.
7	(Medicare Compare or nursing home compare or Calhospital Compare or California State Report Card or California Hospital Outcomes or myhealthcareadvisor or Massachusetts Health Quality or (Pennsylvania adj3 coronary) or (Hospital Quality adj2 Safety Survey) or Home health Compare or Physician Compare or (New York adj2 Cardiac adj2 Report\$) or (New York adj5 surg\$) or Cleveland Health Quality Choice or (HCFA adj5 mortality) or (HCFA adj5 death) or Federal employee health benefit guide or QualityCounts or CAHPS or HEDIS).ti,ab.
8	3 and 4 and 5 and 6
9	7 or 8
10	limit 9 to yr="1980 -Current"

# **CINAHL EBSCO Plus with Full Text**

**Date Searched: 05/18/2011**

S51	S49 NOT S50
S50	S42 or S48 Limiters – Publication Type: Commentary, Editorial, Letter;

	Exclude MEDLINE records; Published Date from: 19800101-20111231
S49	S42 or S48 Limiters – Exclude MEDLINE records; Published Date from: 19800101-20111231
S48	S43 and S44 and S46 and S47
S47	S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41
S46	S26 or S27 or S28 or S29 or S30 or S31 or S45
S45	S24 and S25
S44	S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23
S43	S1 or S2 or S3 or S4
S42	AB ("Medicare Compare" or "nursing home compare" or "Calhospital compare" or "California State Report Card" or "California Hospital Outcomes" or myhealthcareadvisor or "Massachusetts Health Quality" or (Pennsylvania n3 coronary) or ("hospital quality" n2 "safety survey") or "home health compare" or "physician compare" or ("New York" n2 cardiac n2 report*) or ("New York" n5 surg*) or "Cleveland Health Quality Choice" or (HCFA n5 mortality) or (HCFA n5 death) or "Federal Employee Health Benefit Guide" or QualityCounts or CAHPS or HEDIS)AB ("Medicare Compare" or "nursing home compare" or "Calhospital compare" or "California State Report Card" or "California Hospital Outcomes" or myhealthcareadvisor or "Massachusetts Health Quality" or (Pennsylvania n3 coronary) or ("hospital quality" n2 "safety survey") or "home health compare" or "physician compare" or ("New York" n2 cardiac n2 report*) or ("New York" n5 surg*) or "Cleveland Health Quality Choice" or (HCFA n5 mortality) or (HCFA n5 death) or "Federal Employee Health Benefit Guide" or QualityCounts or CAHPS or HEDIS)
S41	(MH "Decision Making+")
S40	(MH "consumer satisfaction")
S39	(MH "consumer advocacy")
S38	(MH "consumer participation")
S37	(MH "Hospital Mortality")
S36	(MH "Patient Selection")
S35	(MH "Guideline Adherence")
S34	(MH "Professional Practice+")
S33	(MH "Attitude of Health Personnel")
S32	(MH "Patient Satisfaction")

S31	AB star w2 performance
S30	AB star n2 rating*
S29	AB league w1 table*
S28	AB report w1 card*
S27	AB quality n2 report*
S26	AB score w1 card*
S25	AB (performan* or assessment* or evaluat* or quality or public* or consumer* or patient* or transparen* or provider*)
S24	AB (dissemin* or disclos* or profil* or inform* or indicator* or metric* or rank* or compar* or score* or rating* or data or measure* or criteria or standard* or account* or report* or release* or initiative* or star)
S23	AB ("health care cent*" or "Health care provider?" or coronary or cardiac or cardiologist?)
S22	(MH "Public Health Administration")
S21	(MH "Health Facility Administration")
S20	(MH "Health Care Industry")
S19	(MH "Professional Practice")
S18	(MH "Family Practice")
S17	(MH "Private Practice")
S16	(MH "Primary Health Care")
S15	(MH "Group Practice") OR (MH "Joint Practice")
S14	(MH "Hospices") OR (MH "Hospice Care")
S13	(MH "Medicaid")
S12	(MH "Medicare")
S11	(MH "Health Maintenance Organizations")
S10	(MH "Insurance, Health+") OR (MH "Managed Care Programs+")
S9	(MH "Home Health Care+") OR (MH "Home Nursing, Professional")
S8	(MH "Nursing Homes+") OR (MH "Skilled Nursing Facilities")
S7	(MH "Physicians+") OR (MH "Allied Health Personnel+")
S6	(MH "Long Term Care") OR "long term care facilit*"
S5	(MH "Hospitals+") OR (MH "Ambulatory Care Facilities+") OR (MH "Academic Medical Centers") OR (MH "Hospitals, Public+") OR (MH "Hospitals, Rural") OR (MH "Hospitals, Special+") OR (MH "Hospitals, Urban") OR (MH "Magnet Hospitals") OR (MH "Housing for the Elderly") OR (MH "Ancillary Services, Hospital") OR (MH "Hospitals, Community")

S4	(MH "Truth Disclosure") or (MH "Access to Information") or (MH "Mandatory Reporting")
S3	AB quality n2 indicator*
S2	(MH "Quality Assurance") OR (MH "Clinical Indicators") OR (MH "Performance Measurement Systems") OR (MH "Health Plan Employer Data and Information Set") OR (MH "Outcome Assessment Information Set") OR (MH "Nursing Audit") OR (MH "Quality of Care Research")
S1	(MH "Benchmarking") OR (MH "Quality Improvement") OR (MH "Quality of Health Care") OR (MH "Performance Measurement Systems") OR (MH "Quality Assessment")

# **EMBASE - Elsevier (1973-present)**

**Date searched: 06/29/2011**

9	#7 NOT #8
8	#5 OR #6 AND ('editorial'/it OR 'letter'/it)
7	#5 OR #6
6	#1 AND #2 AND #3 AND #4
5	'medicare compare':ab,ti OR 'nursing home compare':ab,ti OR 'calhospital compare':ab,ti OR 'california state report card':ab,ti OR 'california hospital outcomes':ab,ti OR myhealthcareadvisor:ab,ti OR 'massachusetts health quality':ab,ti OR (pennsylvania NEAR/3 coronary):ab,ti OR ('hospital quality' NEAR/2 'safety survey'):ab,ti OR 'home health compare':ab,ti OR 'physician compare':ab,ti OR ('new york' NEAR/2 cardiac):ab,ti OR ('new york' NEAR/5 surg*):ab,ti OR 'cleveland health quality choice':ab,ti OR (hcfa NEAR/5 mortality):ab,ti OR (hcfa NEAR/5 death):ab,ti OR 'federal employees health benefit guide':ab,ti OR qualitycounts:ab,ti OR cahps:ab,ti OR hedis:ab,ti AND [embase]/lim AND [2006-2011]/py
4	'hospital'/exp OR 'physician'/exp OR 'hospice'/de OR 'hospital management'/exp OR 'public health service'/de OR 'health care facility'/de OR 'nursing home'/de OR 'home care'/de OR 'health insurance'/de OR 'health maintenance organization'/de OR 'medicare'/de OR 'medicaid'/de OR 'ambulatory care'/de OR 'group practice'/de OR 'primary health care'/de OR 'private practice'/de OR 'general practice'/de OR 'paramedical personnel'/de OR 'outpatient department'/de OR 'university hospital'/de OR ('long term care facilities':ab,ti OR 'health care center':ab,ti AND 'health care centers':ab,ti OR 'health care centre':ab,ti OR 'health care centres':ab,ti OR 'health care provider':ab,ti AND 'health care providers':ab,ti) OR coronary:ab,ti OR cardiac:ab,ti OR cardiologist:ab,ti OR cardiologists:ab,ti AND [embase]/lim AND [2006-2011]/py

3	'consumer advocacy'/de OR 'consumer attitude'/de OR 'decision making'/de OR 'patient decision making'/de OR 'patient attitude'/de OR 'health personnel attitudes' OR 'physician attitudes' OR 'nurse attitudes' OR 'clinical practice'/de OR 'professional practice'/de OR 'practice guideline'/de OR 'patient selection'/de OR 'patient participation'/de OR 'mortality'/de OR decision*:ab,ti OR decide*:ab,ti OR choice*:ab,ti OR choos*:ab,ti OR behav*:ab,ti AND [embase]/lim AND [2006-2011]/py
2	((disseminat* OR disclos* OR profil* OR inform* OR indicator* OR metric* OR rank* OR compar* OR score* OR rating* OR rate* OR data OR measure* OR criteria OR standard* OR account* OR report* OR releas* OR initiative* OR star) NEAR/5 (perform* OR assessment* OR evaluat* OR quality OR public* OR consumer* OR patient* OR transparen* OR provider*)):ab,ti OR 'score card':ab,ti OR 'score cards':ab,ti OR (quality NEAR/2 report*):ab,ti OR 'report card':ab,ti OR 'report cards':ab,ti OR 'league table':ab,ti OR 'league tables':ab,ti OR (star NEAR/2 rating):ab,ti OR (star NEAR/2 performance):ab,ti AND [embase]/lim AND [2006-2011]/py
1	'information service'/de OR 'information dissemination'/de OR 'mandatory reporting'/de OR 'access to information'/de OR 'performance measurement system'/de OR 'quality of nursing care'/de OR 'health care quality'/de OR 'quality control'/de OR 'health services research'/de AND [embase]/lim AND [2006-2011]/py

### EBSCO Econlit (1969-present)

Date Searched: 05/25/2011

S 7	s1 or s6
S 6	S2 and S3 and S4 and S5
S 5	(AB (benchmark* or disclos* or rank* or compar* or score* or rating* or rate* or standard* or account* or report*) ) and ( AB (perform* or assessment* or evaluat* or quality* or public* or transparen*) ) or (AB (score n1 card* or quality w2 report* or report n1 card* or league n1 table* or star w2 rating or star w1 performance))
S 4	AB (decision* or decid* or attitud* or choice* or choos* or behav* or effect* or incentiv* or select*)
S 3	(AB (consumer* or patient* or doctor* or physician* or surgeon* or nurse* or nursing w1 home* or hospice* or long w1 term w1 care w1 facilit* or medicare or medicaid or allied w1 health or provider* or insurance or HMO or health w1 maintenance w1 organization* or hospital* or group w1 practice* or private w1 practice* or public w1 health))
S 2	SU "Health: Government Policy; Regulation; Public Health" or SU "analysis of health care markets "



S1	AB medicare n1 compare or nursing w1 home w1 compare or Calhospital w1 compare or California w1 State w1 Report w1 Card or myhealthcareadvisor or California w1 Hospital w1 Outcomes or Massachusetts w1 Health w1 Quality or Pennsylvania n3 coronary or Hospital w1 Quality n2 Safety Home w1 Health w1 Compare or Physician w1 Compare or New w1 York n2 Cardiac w2 Report* or New w1 York n5 surg* or Cleveland w1 Health w1 QualityHCFA n5 mortality or HCFA n5 death or Federal w1 Employee w1 Health w1 Benefit w1 Guide or QualityCounts or CAHPS or HEDIS
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# **EBSCO BUSINESS SOURCE PREMIER**

**Date Searched: 05/25/2011**

S12	s1 or s10
S11	s1 or s10
S10	S4 and S5 and S6 and S9
S9	S7 or S8
S8	AB ( dissem* or disclos* or profil* or inform* or indicator* or metric* or rank* or compar* or score* or rating* or rate* or data or measure* or criteria or standard* or account* or report* or releas* or initiative* or star ) and AB ( performan* or assessment* or evaluat* or quality or public* or consumer* or patient* or transparen* or provider* )
S7	AB "public report*" or "score card*" or scorecard* or (quality n2 report*) or "quality n2 measur*" or "report card*" or "league table*" or (star n2 rating) or (star n2 performance)
S6	SU "patient education" or "patients" or "patient satisfaction" or "patient selection" or "decision making" or "consumer attitudes" or "consumer satisfaction" or "consumers' preferences" or "consumer behavior" or "consumer activism" or "organizational behavior" or "information behavior"
S5	DE "HOSPITALS" OR DE "CANCER hospitals" OR DE "CHRONIC disease hospitals" OR DE "MEDICAL hospitals" OR DE "NEUROLOGY hospitals" OR DE "SURGICAL hospitals" or DE "medical care" or DE "health services administration" or DE surgeons or DE "Insurance companies" or DE "nursing care facilities" or DE medicare or DE medicaid or DE physicians or DE "health care industry" or DE "health insurance" or DE "long-term care facilities" or DE "nursing homes" or DE "hospitals-administration" or DE nurses or DE "nursing care facilities" or DE "nursing home chains" or DE "health maintenance organizations" or DE "managed care plans" or DE "group medical practice" or DE "allied health practitioners"
S4	S2 or S3
S3	SU benchmarking or SU key performance indicators orSU evaluation or SU quality control or SU quality standards or SU quality assurance or SU standards or AB quality n2 indicat*

S2	SU disclosure of information or SU disclosure or SU access to information or SU report writing or SU databases
S1	AB "medicare compare" or "nursing home compare" or "calhospital compare" or "california state report card" or "california hospital outcomes" or myhealthcareadvisor or "massachusetts health quality" or (pennsylvania n3 coronary) or ("hospital quality" n2 "safety survey") or "home health care compare" or "physician compare" or ("new york" n2 cardiac n2 report*) or ("New York" n5 surg*) or "Cleveland Health Quality Choice" or "health care finance administration" or "Federal Employees Health Benefit Guide" or QualityCounts or CAHPS or HEDIS

**Public Affairs Information Service International (PAIS)**  
**ProQuest CSA**  
**Searched 5/25/2011**

(AB=((Medicare Compare) or (Nursing Home Compare) or (Calhospital Compare)) or AB=((California State Report Card) or (California Hospital Outcomes) or myhealthcareadvisor) or AB=((Massachusetts Health Quality) or (Pennsylvania within 3 coronary) or (hospital quality within 2 safety survey)) or AB=((home health compare) or (physician compare) or (new york within 2 cardiac within 2 report*)) or AB=((New York within 5 surg*) or (Cleveland Health Quality Choice) or HCFA) or AB=(QualityCounts or (Federal Employee Health Benefit Guide) or HEDIS) or AB=CAHPS) or(((DE=(medical service or physicians or nurses or surgeons or medical workers or medical profession: group practice or hospitals or nursing homes or home care or hospices (terminal care) or outpatient services or medical centers or public health or public health administration or medicare or medicaid program or health insurance or managed care or health maintenance organizations)))
and(DE=(quality control or performance or measurement or standards)))
and((AB=((dissem* or disclos* or profil* or inform* or indicator* or metric* or rank* or compar* or score* or rating* or rate* or data or measure* or criteria or standard* or account* or report* or release* or initiative* or star) within 10 (perform* or assessment* or evaluat* or quality or public* or consumer* or patient* or transparen* or provider*))) or(AB=(score card* or scorecard* or (quality within 2 report*) or report card* or league table* or (star within 2 rating) or (star within 2 performance))))))

Search strategies for the grey literature databases comprised keyword/phrase searching (e.g., public report\*, Medicare compare, etc) primarily, due to the unavailability of relevant subject searching capability in most of the databases. The NYAM Grey Literature database search was comprised of keyword/phrase searching ‘ANDed’ together with their subject term ‘quality of health care.’

**AARP Ageline (OvidSP)**

**Searched 07/22/2011**

1	report card\$.ti,ab.	40
2	((Performan\$ or assessment\$ or evaluat\$ or public\$ or consumer\$ or patient\$ or transparen\$ or provider\$) adj5 (quality adj2 report\$)).ti,ab.	77
3	(Medicare Compare or nursing home compare or Calhospital Compare or California State Report Card or California Hospital Outcomes or myhealthcareadvisor or Massachusetts Health Quality or (Pennsylvania adj3 coronary) or (Hospital Quality adj2 Safety Survey) or Home health Compare or Physician Compare or (New York adj2 Cardiac adj2 Report\$) or (New York adj5 surg\$) or Cleveland Health Quality Choice or (HCFA adj5 mortality) or (HCFA adj5 death) or Federal employee health benefit guide or QualityCounts or CAHPS or HEDIS).ti,ab.	107
4	1 or 2 or 3	<b>206</b>

## Appendix B. Inclusion and Exclusion Criteria

### Abstract and Title Triage

<p><b>Include: Based on Public Reporting Definition and PICOTS</b> (If there is doubt, Pull Paper)</p> <p style="text-align: center;"><b>-OR-</b></p> <p><b>Exclude</b> (Primary Reason)</p>	<p><input type="radio"/> Pull Paper</p> <p><input type="radio"/> Background (e.g., Relevant Theory, Historical Perspective, Recent Technological Changes that affect Public Reporting, etc.)</p> <p><input type="radio"/> Unsure - Pull Paper</p> <p><input type="radio"/> Wrong Topic/Intervention (not about Public Reporting)</p> <p><input type="radio"/> Focuses only on methodological issues related to the quality measures reported (e.g., risk adjustment methods, validity of the measures reported, etc.)</p> <p><input type="radio"/> Public Reporting as an Outcome, not Intervention</p> <p><input type="radio"/> Wrong population/setting: not a health/medical care setting or service</p> <p><input type="radio"/> Wrong population/setting: not an included individual provider type (e.g., Include: doctor/nurse; Exclude: dentist, dietician, etc.)</p> <p><input type="radio"/> No outcome data/study design (e.g, non-systematic review, letter, editorial)</p> <p><input type="radio"/> Not human population</p> <p><input type="radio"/> Pre 1980 data or report</p> <p><input type="radio"/> No English Abstract of a Foreign Language article (if English abstract is available, include or exclude based on content)</p> <p><input type="radio"/> Other Reason (Specify)</p>
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Full Text Review

**Include: Based on Definition, PICOTS and that it corresponds to at least one key question.** (If include, complete the following four questions):

1. What is the name/subject of the Public Report:

2. What types of health care setting are the Public Reports about (all that apply):

- ☐ Health Plan/Insurer/HMO  
☐ Hospital Health System  
☐ Physician/Individual Providers  
☐ Nursing Homes Home Health  
☐ Outpatient Clinics Group Practices  
☐ Other, Specify:

3. Key Questions article addresses (all that apply):

☐ KQ1 ☐ KQ2 ☐ KQ3 ☐ KQ4 ☐ KQ5 ☐ KQ6

None ☐ EXCLUDE

4. What best describes the study design:

- ☐ Randomized Study  
☐ Observational  
☐ Survey research  
☐ Single Case Study  
☐ Lab-Type Experimental  
☐ Secondary Data Analysis/Modeling  
☐ Qualitative, Focus Groups  
☐ Qualitative, In-depth Interviews  
☐ Systematic Review  
☐ Other/Unclear, Specify:



**Background** (Consider for introduction or discussion)

☐ **Unsure/Pending**

**Exclude** (Primary Reason):

Please select primary exclusion reason:

- ☐ Wrong Topic/Intervention (not about Public Reporting)  
☐ Focuses only on methodological issues related to the quality measures reported (e.g., risk adjustment methods, validity of the measures reported, etc.)

- ☐ Public Reporting as an Outcome, not Intervention
- ☐ Wrong population/setting: not a health/medical care setting or service
- ☐ Wrong population/setting: not an included individual provider type (e.g., Include: doctor/nurse; Exclude: dentist, dietician, etc.)
- ☐ No outcome data/study design (e.g, non-systematic review, letter, editorial)
- ☐ Not human population
- ☐ Pre 1980 data or report
- ☐ Not in English (if English abstract is available, include or exclude based on content)
- ☐ Not Relevant/Other Codes do not Apply (Specify):

Study design triage:

Studies were divided in to

- A. Trials and observational studies with relevant outcomes for KQs
- B. Qualitative studies and other studies reporting outcomes that are necessary but not sufficient precursors to the outcomes in the stated key questions (e.g., awareness, comprehension, attitudes toward public reporting including specific presentations) or hypothetical choices or decisions tasks. These study designs include:
  - a. Descriptive surveys
  - b. Focus Groups
  - c. Interviews
  - d. Lab-type experiments
    - i. Choice tasks
      - 1. Constrained or based on different materials
    - ii. Cognitive interviewing
- C. Studies to be now be excluded based on design
  - a. Single case studies
  - b. Descriptive studies of implementation of report cards (no outcomes)
  - c. Descriptive surveys or other qualitative studies that were predominately about another subject (not about public reporting) and contained one-item or question about the public disclosure of data.

## Appendix C. Excluded Studies

(Reasons for exclusion to be included in final report)

1. *Symposium report: Toward better choices in health care*. Inquiry, 1988. **25**: p. 423-468.
2. *Cost control for quality care: meeting the challenge of health system financing*. Studies and research no. 32. 1992: International Social Security Association, 1992. vi+218 pp.
3. *Data project aids managed care plan evaluations*. Employee Benefit Plan Review, 1994. **48**: p. 14.
4. *Government to study health plan choices*. AHA News, 1995. **31**: p. 5.
5. *Judgment day*. Drug Topics, 1995. **139**: p. 26.
6. *Report cards promise more than they deliver*. Modern Healthcare, 1995. **25**: p. 30.
7. *West*. Modern Healthcare, 1995. **25**: p. 65.
8. *Health plan performance gets overhauled*. Best's Review / Life-Health Insurance Edition, 1996. **97**: p. 12.
9. *HEDIS compliance software available*. Drug Topics, 1996. **140**: p. 8.
10. *MEDICAID HEDIS INFO NOW AVAILABLE*. H&HN: Hospitals & Health Networks, 1996. **70**: p. 12-12.
11. *N.Y. bypass deaths dropping*. Modern Healthcare, 1996. **26**: p. 24.
12. *Public call brings more than 800 HEDIS measures*. Physician Executive, 1996. **22**: p. 3.
13. *New software addresses quality reporting rules*. Best's Review / Life-Health Insurance Edition, 1997. **97**: p. 61.
14. *Competition and accountability are serious business for hospitals*, in *Modern Healthcare*. 1998, Crain Communications Inc. (MI). p. 24.
15. *NCQA uses HEDIS to assess managed care quality against national averages, fee-for-service*. Employee Benefit Plan Review, 1998. **52**: p. 16.
16. *New HEDIS specs broaden performance measurement*. Health Management Technology, 1998. **19**: p. 8.
17. *For the record*. Modern Healthcare, 1999. **29**: p. 16.
18. *HCFA posts HMO ratings on Web site*. Modern Healthcare, 1999. **29**: p. 6.
19. *Public access to the National Practitioner Data Bank: hearings, March 1 and 16, 2000, what consumers should know about their doctors; assessing the operation of the National Practitioner Data Bank*. 106th Cong., 2d sess. Serial no. 106-93. 2000: Superintendent of Documents, 2000. iii+128 pp.
20. *The 2000 performance review: a guide to U.S. hospitals*. 2000: Ingenix Publishing Group, 2000. ix+923 pp.
21. *Web Watch*. Quality Progress, 2003. **36**: p. 21-21.
22. *CT. hospitals give feedback on HCAHPS*. AHA News, 2004. **40**: p. 2-2.
23. *Leapfrog Group Releases Hospital Quality and Safety Survey*. Quality Progress, 2005. **38**: p. 16-16.
24. *Leapfrog Group releases latest hospital survey results*. Healthcare Purchasing News, 2005. **29**: p. 8-8.
25. *HCAHPS promises to tell hospitals a lot about how they can improve care*. Administration of Public Health Programs, 2006. **42**: p. 7-7.
26. *Patient Perception of Reputation Is Key*. Health Care Collector: The Monthly Newsletter for Health Care Collectors, 2006. **19**: p. 5-6.
27. *When saying "I'm sorry" just isn't enough*. Medical Economics, 2006. **83**: p. 20-20.
28. *By the Numbers*. hfm (Healthcare Financial Management), 2007. **61**: p. 1-8.
29. *Leapfrog: 87% of hospitals fail to take all recommended steps to avoid four common infections*. H&HN: Hospitals & Health Networks, 2007. **81**: p. 66-68.
30. *PATIENT SAFETY = PATIENT SATISFACTION*. Trustee, 2007. **60**: p. 4-4.
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## Appendix D. Study Design Terminology

The study design terminology used in this review and included in the evidence tables were based on the definitions from the glossary at the Health Services Research Methods website maintained by AcademyHealth <http://www.hsrmmethods.org/Home.aspx>. Minor changes were made in the names for consistency.

### **One Group Posttest Only**

A type of experimental study in which only one group receives a treatment and is then measured in a post test -- after treatment. In this design, there is no control group or baseline condition to compare with.

### **One Group Pretest Posttest**

A study design in which a sample is observed twice, one prior to (pre), and once after (post) an intervention or experiment.

### **Time Series Posttest Only**

Study design in which outcomes are measured repeatedly in a single group of participants only after a manipulation or a natural event.

### **Interrupted Time Series**

Study design in which outcomes are measured repeatedly in a single group of participants both before and after a manipulation or a natural event.

### **Comparison Group(s) Posttest Only**

A study design in which two or more groups, at least a study group and a control group, are measured at one point in time following an intervention or experiment. The study group experiences an intervention or experiment while the control group does not.

### **Comparison Group(s) Pretest Posttest**

A study design in which two or more groups subject to different experiences or treatments are compared. The purpose is to make statistical comparisons between two or more groups and demonstrate a causal relationship between the independent variable and outcome of interest.

### **Multiple Group Interrupted Time Series**

A form of *Time Series Design* that adds a control equivalent control group to the Interrupted Time Series Design.

### **Cross Sectional**

Studies that conduct measurements on a group of subjects at one point in time. Cross-sectional studies look at both exposure and outcomes at one point in time and are designed to evaluate associations between risk factors and outcomes in a specific population.

## Appendix E. Description of Public Reports from the included studies

This appendix includes descriptive information about public reports that are the subject of two or more included studies in the review in order to avoid the need to repeat these descriptions in evidence tables and the text. This is not an exhaustive list of all available report. It is only includes those that are the subject of the research included in this review.

Name	Producer	Dates (Start and End)	Description			Source
			Format	Content	Distribution	
Nursing Home Compare	CMS	11/2002 to Present	Stars:  Much Above Avg. ***** Above Avg. **** Average *** Below Avg. ** Much Below Avg. *	Yearly nursing home report on quality measures for nursing homes: <ul style="list-style-type: none"> <li>Quality measures (19) come from the MDS Repository</li> <li>Five of the quality measures are risk-adjusted at the resident level to reduce the heterogeneity in resident health conditions</li> <li>Sortable results based on overall quality, health inspections, nursing home staffing, quality measures, program participation, number of certified beds, and type of ownership</li> </ul>	Web site, no fee	Nursing Home Compare Website: <a href="http://www.medicare.gov/NHCompare/Home.asp">http://www.medicare.gov/NHCompare/Home.asp</a>

Name	Producer	Dates	Description			Source
Home Health Compare	CMS	Fall 2003 to Present	Tables	<p>Yearly home health report on quality measures for home health agencies. Categories of process and outcome measures include:</p> <ul style="list-style-type: none"> <li>• Managing Daily Activities</li> <li>• Managing Pain and Treatment Symptoms</li> <li>• Treating Wounds and Preventing Pressure Sores</li> <li>• Preventing Harms</li> <li>• Preventing Unplanned Hospital Care</li> </ul> <p>Comparisons with state and national data provided. Information comes from the Outcome and Assessment Information Set (OASIS) quality data submitted by home health agencies to state repositories. Comparisons with state and national data provided.</p>	Web site, no fee	<p>CMS Website:</p> <p><a href="http://www.medicare.gov/homehealthcompare/search.aspx">http://www.medicare.gov/homehealthcompare/search.aspx</a></p>
Hospital Compare	CMS	04/2005 to Present	Graphs and tables	<p>Yearly hospital report includes quality measures in the following categories:</p> <ul style="list-style-type: none"> <li>• Process of Care Measures</li> <li>• Outcome of Care Measures</li> <li>• Use of Medical Imaging</li> <li>• Surveys of Patients' Hospital Experiences</li> <li>• Patient Safety Measures</li> <li>• Medicare Payment and Volume</li> </ul>	Web site, no fee	<p>Hospital Compare Web site:</p> <p><a href="http://www.hospitalcompare.hhs.gov/">http://www.hospitalcompare.hhs.gov/</a></p>
)				<p>Medical conditions included in the report:</p> <ul style="list-style-type: none"> <li>• Surgical</li> <li>• Health Attack</li> <li>• Pneumonia</li> <li>• Heart Failure</li> <li>• Children's Asthma</li> <li>• Medical Imaging</li> </ul>		

Name	Producer	Dates	Description			Source
HEDIS	NCQA	1991 to Present	Star ratings provide a view of health plan performance in five technical categories	Yearly health plan report card with 71 quality measures in five domains: <ul style="list-style-type: none"> <li>• Effectiveness of Care</li> <li>• Access/Availability of Care</li> <li>• Experience of Care</li> <li>• Utilization and Relative Resource Use</li> <li>• Health plan descriptive information</li> </ul>	Web site, no fee	NCQA Web site: <a href="http://www.ncqa.org/tabid/59/default.aspx">http://www.ncqa.org/tabid/59/default.aspx</a>
CAHPS Health Plan	AHRQ	1998 to Present	Stars about performance and bar charts for trends	Yearly health plan report card on the experiences of respondents (adults and/or guardians of children) in the following areas: <ul style="list-style-type: none"> <li>• Getting needed care</li> <li>• Getting care quickly</li> <li>• How well doctors communicate</li> <li>• Health plan information and customer service</li> </ul>	Printed and Web site, no fee	AHRQ Web site: <a href="https://www.cahps.ahrq.gov/content/cahpsOverview/OVER_Intro.asp?p=101&amp;s=1">https://www.cahps.ahrq.gov/content/cahpsOverview/OVER_Intro.asp?p=101&amp;s=1</a>
CAHPS Hospitals	AHRQ	2005 to Present	Stars about performance and bar charts for trends	Yearly hospital report card on the experiences of respondents in the following areas: <ul style="list-style-type: none"> <li>• Nurse Communication</li> <li>• Doctor Communication</li> <li>• Explanation of Medicines</li> <li>• Timely help from hospital staff</li> <li>• Information about recovery</li> <li>• Pain Control</li> <li>• Cleanliness</li> <li>• Quiet at night</li> </ul>	Printed and Web site, no fee	AHRQ Web site: <a href="https://www.cahps.ahrq.gov/content/products/HOSP/PROD_HOSP_Intro.asp">https://www.cahps.ahrq.gov/content/products/HOSP/PROD_HOSP_Intro.asp</a>
CAHPS Clinicians and Group Practices	AHRQ	2005 to Present	Stars about performance and bar charts for trends	Yearly clinicians and groups survey report on the experiences of respondents in the following areas: <ul style="list-style-type: none"> <li>• Getting appointments and health care when needed</li> <li>• How well doctors communicate</li> <li>• Courteous and helpful office staff</li> </ul>	Printed and Web site, no fee	AHRQ Web site: <a href="https://www.cahps.ahrq.gov/CAHP_Skit/files/309_CG_Reporting_Measures.htm">https://www.cahps.ahrq.gov/CAHP_Skit/files/309_CG_Reporting_Measures.htm</a>

Name	Producer	Dates	Description			Source
New York CSRS	NY State DOH	1989 to Present	Data and graphs	Yearly report for hospitals and individual providers. Reports in-hospital and 30-day expected, observed and risk-adjusted mortality rates for adults and children undergoing Percutaneous Coronary Interventions (PCI) and/or CABG.	Printed and Web site, no fee	New York State Department of Health Web site: <a href="http://www.health.ny.gov/statistics/diseases/cardiovascular/">http://www.health.ny.gov/statistics/diseases/cardiovascular/</a>
Cardiac Surgery in Pennsylvania	PHC4	1994 to Present	Data and graphs	Yearly report for hospitals and surgeons. Reports number of surgeries performed, in-hospital and 30-day mortality rates, readmission rates within 7-30 days, data on post-surgical lengths of stay and hospital charges.	Printed and Web site, no fee	PA Health Care Cost Containment Council Web site <a href="http://www.phc4.org/reports/cabg/09/docs/cabg2009report.pdf">http://www.phc4.org/reports/cabg/09/docs/cabg2009report.pdf</a>
California CABG Outcomes Reporting Program	OSHPD Health Care Outcomes Center	1997 to Present	Data and graphs	Yearly report for hospitals and surgeons. It reports the risk-adjusted operative mortality rates by regions. The hospitals are rated yearly and surgeons every other year.	Printed and Web site, no fee	<a href="http://www.oshpd.ca.gov/HID/Products/Clinical_Data/CABG/2008/ExecutiveSummary.pdf">http://www.oshpd.ca.gov/HID/Products/Clinical_Data/CABG/2008/ExecutiveSummary.pdf</a>  <a href="http://www.oshpd.ca.gov/HID/SubmitData/CCORP_CABG/ACardiacSurgeonsGuidetoCCORPfinal.pdf">http://www.oshpd.ca.gov/HID/SubmitData/CCORP_CABG/ACardiacSurgeonsGuidetoCCORPfinal.pdf</a>

Name	Producer	Dates	Description			Source
Wisconsin Quality Counts	Alliance, a large employer-purchasing cooperative in the Madison, Wisconsin, area.	1999-present	<p>Graphics used to indicate rating:</p> <p><b>(+)</b> Plus signs indicate that there were fewer mistakes, complications, and deaths than expected</p> <p><b>(0)</b> Circles mean that there was an average number of mistakes, complications, and deaths</p> <p><b>(-)</b> Minus signs mean that there were more mistakes, complications, and deaths than expected</p>	Report in 2001 included two summary indices of adverse events (deaths and complications) occurring within the broad categories of surgery and nonsurgery, and indices in three individual clinical areas: hip/knee surgery, cardiac care, and maternity care.	The 2001 report was inserted into the Madison newspaper; and Alliance employers sent it to employees' homes. It was also available on a Web site, and copies were distributed by community groups and at libraries.	Currently available to subscribers only: <a href="http://the-alliance.org/QClogin.aspx">http://the-alliance.org/QClogin.aspx</a>
Cleveland Health Quality Choice Report Card	Cleveland Health Quality Choice Coalition	May 1993 to Dec 1998	<p>Public release available to all: Graphs/Tables indicated hospital performance as better than expected, as expected, or worse than expected.</p> <p>Detailed release: available only to qualified users who attended 1/2 day training contained unadjusted data and the 95%CIs around the predicted values.</p>	The semi-annual report included hospital in-patient data on patient satisfaction, intensive care unit mortality and length of stay, general hospital mortality and length of stay for selected diagnoses and/or procedures, and several indicators of obstetrical performance.	Printed	Example report provided at: <a href="http://qualitysafety.bmj.com/content/11/2/202/T1.expansion.html">http://qualitysafety.bmj.com/content/11/2/202/T1.expansion.html</a>



<b>Name</b>	<b>Producer</b>	<b>Dates</b>	<b>Description</b>			<b>Source</b>
California Hospital Outcomes Project	Office of Statewide Health Planning and Development	1993 to present	Graphs	Yearly reports on risk adjusted outcomes for several diagnoses, including cardiovascular, infection and others at acute care hospitals.	Printed and Web site, no fee	<a href="http://www.oshpd.ca.gov/">http://www.oshpd.ca.gov/</a>
HCFA Mortality Report	HCFA	1986 to 1992	Data	Yearly report for hospitals' predicted and actual in-hospital mortality data for several diagnoses. Through time, they presented a somewhat different breakdown of the mortality rates by disease or procedure categories.	Printed	Mennemeyer, 1997. Website N/A.
Ontario Cardiac Reports	Cardiac Care Network of Ontario	1999 to present	Data and graphs	Semi- annual reports on cardiac procedure outcomes.	Printed and Web site, no fee	<a href="http://www.ccn.on.ca">www.ccn.on.ca</a>
PHC4 Hospital Effectiveness Report	PHC4	1989 to present	Data and graphs	Annual report of approximately 50 (depending on region) individual diagnosis related groups and hospital summary statistics, including mortality.	Printed and Web site, no fee	<a href="http://www.phc4.org/default.htm">http://www.phc4.org/default.htm</a>

## Appendix F. Method for Quality Assessment of Individual Quantitative Studies

### Overall ratings

Individual studies were rated as ‘good’, ‘fair’, or ‘poor’ as based on definition are from chapter titled “Assessing the Risk of Bias of Individual Studies when Comparing Medical Interventions” in the AHRQ *Methods Guide for Effectiveness and Comparative Effectiveness Reviews* (hereafter, *Methods Guide*)

### Good/Low risk of bias

Implies confidence on the part of the reviewer that results represent the true treatment effects (study results are considered valid). The study reporting is adequate to judge that no major or minor sources of bias are likely to influence results.

**Fair/Medium risk of bias** implies some confidence that the results represent true treatment effect. The study is susceptible to some bias the problems are not sufficient to invalidate the results (i.e., no flaw is likely to cause major bias). The study may be missing information, making it difficult to assess limitations and potential problems.

**Poor/High risk of bias** implies low confidence that results represent true treatment effect. The study has significant flaws that imply biases of various types that may invalidate its results; these may arise from serious errors in conduct, analysis, or reporting, large amounts of missing information, or discrepancies in reporting.

### Assessment Criteria

We pre specified six key criteria that could be applied to the various types of observational studies as well as the few studies that use random assignment to evaluate public reporting. The selected criteria are based on recommendations in the AHRQ chapter in the methods guide, “Assessing the Risk of Bias of Individual Studies when Comparing Medical Interventions.” We reviewed the types of bias and the suggested criteria discussed in this chapter and followed the recommendation that those most relevant to the topic and appropriate for the study designs be employed.

Based on this assessment we selected six criteria for this review:

1. How adequate was randomization (for randomized studies) or how appropriate selection of comparison group or time:
2. How similar are groups at baseline (or time periods) or how well did the analysis control for differences?
3. How well does the design or analyses account for important potential confounding?
4. How well does the study rule out any impact from an unintended exposure or a concurrent intervention that might bias results?

5. How well are all potential outcomes pre-specified and are the pre-specified outcomes reported?
6. How well are primary outcomes assessed? Were valid and reliable measures used and implemented consistently across all study participants/groups?”

The overall assessment was not derived from a direct linear combination of the six criteria. Given the nature of public reporting as an intervention, the criteria corresponding to selection bias (1, 2, and 3) were of greatest concern when determining how much confidence we could have in each study’s result. For this reason it is possible for a study to be given an overall assessment of ‘poor’ even if some individual criteria were rated as ‘good’.

### **Guidelines used for quality assessment: type of bias, related criteria and examples**

Included below are the definitions of the types of bias considered in our quality assessments, the corresponding criteria and elaboration on how they might apply to public reporting. The definitions are the Cochrane definitions provided in the Methods Guide chapter cited above.

#### Selection Bias

##### *Definition:*

“Systematic differences that arise from self-selection of treatments, physician-directed selection of treatments, or association of treatment assignments with demographic, clinical, or social characteristics. Includes confounding by indication (when patient prognostic characteristics, such as disease severity or co-morbidity, influence both treatment source and outcomes.) “

##### *Application for Public Reporting*

In assessing our confidence in the results of a study about public reporting, selection bias is the greatest concern. Our concern is that the comparison (either between groups or across time periods) is less valid because factors that affect the two groups/time periods differently impact the results and these may not be addressed sufficiently in the study design or analyses. Few studies in this field are trials (Where the researcher controls the assignment of public reporting); most are observational studies of various kinds. For observational studies selection bias is critical issue.

##### *Assessment Questions*

- 1a. [for RCTs only] Was treatment adequately randomized?
1. [for Observational Studies only] How appropriate is the selection of the comparison groups or the time periods?

Raters need to ask “does what was selected for comparison make sense given the study questions?” If the authors don’t justify the selection, the raters have to make their own assessments. If the authors do explain the selection the raters still have to decide if the groups are appropriate, considering both what the authors said and their own assessment.

Prompts:

If comparing on the level of geographic regions (states, countries, counties) do the researchers justify the selection? Does the researcher demonstrate that they are similar on key variables? If the comparison is pre-post, are the time periods actually prior to the public reporting and after it has been distributed/disseminated and do the time periods seem reasonable?

2. How similar are groups at baseline (or the time periods) or how well did the analysis control for differences?

Simply listing baseline variables in a table or adding them into an equation is not sufficient. In addition to the variables reported the rater should consider what variables would be important and rate the article lower if key differences are not reported.

3. How well does the design or analyses account for important potential confounding?

Confounding means something is different across the groups or time periods that is also associated with the outcome. We are worried that something is ‘muddying up’ the relationship between the intervention and the results. Confounding is important to consider given that Public Reporting is an intervention that is evaluated in situations where few factors can be controlled by the researchers. Raters need to be skeptical, but they cannot assess all possible confounding. The focus is on important potential confounding that could invalidate the results.

Specific concerns are: 1) If something changes (say a public policy or the number of health care options) the concern is that it could be different across the groups. If everyone in the universe of the study is equally affected, it is not confounding. 2) The confounding variable would likely impact the results. If something changes that has no conceptual link to results, it should not be considered—and is unlikely to be measured/mentioned in article.

Raters should be most worried what is different would *increase* the difference across groups or time periods that is being reported as the result. That is, the bias is in the same direction as the impact of the intervention. If the confounding is likely to counteract the impact of the intervention, then it is possible that a study will not address it and the results might be considered a conservative estimate of the true impact.

Study design/structure can be more or less likely to account for confounding. Because of this, study design can be considered when thinking about confounding even though it should not be used as the sole basis for the rating

Analyses can also be used to address confounding if it cannot be controlled for in the design (e.g. sensitivity analyses, regression diagnostics, statistical approaches to identifying or controlling for gaming/codings/measurement issues).

## Performance Bias

### *Definition*

“Systematic differences in the care provided to participants and protocol deviation. Examples include: contamination of the control group with the exposure or intervention, unbalanced

provision of additional interventions or co-interventions, difference in co-interventions, and inadequate blinding of providers and participants.”

#### *Application to public reporting*

This bias is about the intervention, which in this case is public reporting. Here the main concern is that either the non-public reporting group or time period really was exposed to public reporting. This is contamination.

Concurrent interventions are less likely in public reporting, but possible. Example: the study is of hospitals before and after Medicare reporting in two states. In one state between the pre and post period the state department of health issues a report card; that would be a co-intervention. Using these states would then be a poor study design as the performance bias would affect our confidence in the results.

#### *Assessment Question*

4. How well does the study rule out any impact from an unintended exposure or a concurrent intervention that might bias results?” (is contamination across the groups or time periods minimized)

### Reporting Bias

#### *Definition*

“Systematic differences between reported and unreported findings, e.g., differential reporting of outcomes or harms, incomplete reporting of study findings, potential for bias in reporting through source of funding”

#### *Application to public reporting*

We are unlikely to have protocols to compare the article to, so this is based on the article alone. We are looking for results reporting that sound like they are exploratory, but were not presented that way. For example this would be ‘poor’ if a study may say the objective is to compare mortality and readmission across groups of hospitals with and without public reporting. Results report do not report mortality, but report an increase in Quality Improvement activities, and do not mention readmission..

NOTE: if the study said number of quality improvement activities was the outcome, then reported it, this would be fine. The issue is agreement between what the researchers say the outcomes are and what is reported.

#### *Assessment Question*

5. How well are all potential outcomes pre-specified and are the pre-specified outcomes reported?

### Detection Bias

#### *Definition*

“Systematic differences in outcomes assessment among groups being compared, including systematic misclassification of the exposure or intervention, covariates, or outcomes because of variable definitions and timings, diagnostic thresholds, recall from memory, inadequate assessor

blinding, and faulty measurement techniques. Erroneous statistical analysis might also affect the validity of effect estimates.”

#### *Application to public reporting*

This bias is about how things are measured: whether they are measured well (valid and reliable) and/or whether this is the same across groups or time periods.

#### *Assessment Question*

6. How well are primary outcomes assessed? Were valid and reliable measures used and implemented consistently across all study participants/groups?”

#### **Considerations when selecting and applying criteria**

Public reporting as a quality improvement strategy does not lend itself to all of the same types of study designs common to studies of clinical interventions for several reasons. The following are factors we considered when selecting the criteria for assessing the quality of these studies:

- Blinding people (patients, researchers) to the intervention is not practical.
- Public Reporting is often a ‘population-level’ intervention rather than targeted at individuals. Sometimes it is easier to think about this as a public health intervention, such as putting fluoride in the water or banning smoking in public places. Outcomes for individuals are measured and combined to evaluate the intervention that is designed to affect the entire population, but it is often unknown whether individuals experienced the intervention
- The outcomes in studies of public reporting vary. They might include mortality, quality improvement activity, choice of a provider by a patient or by the selection of provider by payers. They may also include actual behavior, reports of what people would do in a hypothetical situation, or their attitudes toward or willingness to use a tool. Risks of bias may differ according to the outcome.
- Public reporting is one of many things that could influence a decision /outcome. This is what makes design and conduct of a good study challenging. In a situation where it is difficult to control influential factors, it is important to be particularly aware of selection bias and specifically confounding. The study design and analyses need to be constructed to increase confidence in the comparison made in the study.
  - For quality rating the issue is not necessarily that other factors influence the decision, it is whether these other factors are distributed differently across the groups or time periods used in the comparisons.

## Appendix G. Quality Assessment of Individual Quantitative Studies

Id	Author	Year	Adequate Randomization (for RCTs) or appropriateness of the comparison groups or time periods?	How similar are groups at baseline or how well did the analysis control for differences?	How well does the design or analyses account for important potential confounding?	How well does the study rule out any impact from an unintended exposure or a concurrent intervention or that might bias results?	How well are all potential outcomes prespecified and are the prespecified outcomes reported?	How well are primary outcomes assessed? Were valid and reliable measures used and implemented consistently across all study participants/groups?	Overall QA
	<b><i>Nursing Homes</i></b>								
8739	Cai	2010	Good	Fair	Fair	Good	Good	Good	Fair
1491	Castle	2007	Fair	Good	Fair	Good	Good	Good	Fair
1100	Castle	2008	Fair	Good	Good	NR	Good	Good	Fair
213	Castle	2010	Fair	Good	Good	NA	Good	Good	Fair
5664	Jung	2010	Fair	Fair	Good	NA	Good	Good	Fair
960	Mukamel	2008	Good	Good	Fair	Good	Good	Good	Good
445	Mukamel	2009	Good	NR	Fair	Good	Good	good	Fair
181	Mukamel	2010	Good	Fair	Fair	Good	Good	Good	Fair
1778	Stevenson	2006	Good	Fair	Fair	Good	Good	Poor	Poor
720	Werner	2009	Good	Good	Good	Good	Good	Good	Good
613	Werner	2009	Good	Good	Good	Good	Good	Good	Good
5662	Werner	2010	Good	Good	Fair	Good	Good	Good	Good
2042	Zinn	2005	Good	Good	Fair	NA post only	Good	Good	Fair
1116	Zinn	2008	Good	Good	Good	Good	Good	Fair	Good
97	Zinn	2010	NA	Fair	Good	Unclear	Good	Fair	Fair
	<b><i>Health Plans</i></b>								
1845	Abraham	2006	Good	Poor	Fair	Good	Fair	Good	Poor
1550	Bardenheier	2007	Good	Fair	Fair	Fair	Good	Good	Fair

<b>Id</b>	<b>Author</b>	<b>Year</b>	<b>Adequate Randomization (for RCTs) or appropriateness of the comparison groups or time periods?</b>	<b>How similar are groups at baseline or how well did the analysis control for differences?</b>	<b>How well does the design or analyses account for important potential confounding?</b>	<b>How well does the study rule out any impact from an unintended exposure or a concurrent intervention or that might bias results?</b>	<b>How well are all potential outcomes prespecified and are the prespecified outcomes reported?</b>	<b>How well are primary outcomes assessed? Were valid and reliable measures used and implemented consistently across all study participants/groups?</b>	<b>Overall QA</b>
3369	Beaulieu	2002	Fair	Fair	Fair	Good	Good	Good	Fair
3514	Bost	2001	Fair	Poor	Poor	Good	Good	Good	Poor
2620	Chernew	2004	Fair	NA	Fair	Fair	Good	Good	Fair
4420	Chernew	1998	NA	Good	Good	Good	Good	Good	Fair
875	Dafney	2008	Fair	Good	Fair	Good	Good	Fair	Fair
3215	Farley	2002	Fair	Good	Good	Good	Good	Good	Good
3228	Farley	2002	Fair	Fair	Fair	Good	Good	Good	Good
3488	Fox	2001	Poor	Poor	Fair	Poor	Good	Good	Poor
1423	Haberman	2007	Good	Fair	Fair	Good	Good	Good	Fair
6518	Hedricks	2009	Good	Fair	Poor	Poor	Good	Good	Poor
1967	Jin	2006	Fair	Good	Good	Good	Good	Good	Good
10	Jung	2010	Fair	Good	Fair	Good	Good	Good	Good
4228	Knutson	1998	Fair	Fair	Fair	Good	Good	Good	Fair
3406	Lied	2001	Fair	Fair	Fair	Good	Good	Good	Fair
619	Liu	2009	Good	Fair	Fair	Fair	Good	Good	Fair
3553	McCormack	2001	Fair	Good	Fair	Good	Fair	Fair	Fair
3356	Pham	2002	Good	Good	Good	Good	Good	Good	Good
3370	Scanlon	2002	Good	Good	Fair	Good	Good	Good	Good
4086	Scanlon	1999	NA	Good	Fair	Fair	Good	Good	Fair
6251	Tai-Seale	2004	Good	Fair	Fair	Good	Good	Good	Fair
3129	Wedig	2020	Good	Good	Fair	Fair	Good	Good	Fair
	<b>Hospitals</b>								
1182	Apolito	2008	Good	Good	Good	Fair	Good	Good	Good



<b>Id</b>	<b>Author</b>	<b>Year</b>	<b>Adequate Randomization (for RCTs) or appropriateness of the comparison groups or time periods?</b>	<b>How similar are groups at baseline or how well did the analysis control for differences?</b>	<b>How well does the design or analyses account for important potential confounding?</b>	<b>How well does the study rule out any impact from an unintended exposure or a concurrent intervention or that might bias results?</b>	<b>How well are all potential outcomes prespecified and are the prespecified outcomes reported?</b>	<b>How well are primary outcomes assessed? Were valid and reliable measures used and implemented consistently across all study participants/groups?</b>	<b>Overall QA</b>
2949	Baker	2003	Good	Good	Fair	Good	Good	Good	Fair
3184	Baker	2002	Good	Fair	Fair	Good	Good	Good	Fair
1512	Bridgewater	2006	Good	Good	Good	Unclear	Good	Good	Good
1735	Carey	2006	Good	Good	Poor	Unclear	Good	Fair	Fair
2443	Caron	2004	Fair	Fair	Poor	Good	Fair	Fair	Fair
3329	Clough	2002	Good	Fair	Fair	Good	Good	Good	Fair
8164	Cutler	2004	Good	Good	Fair	Good	Fair	Good	Fair
941	Dranove	2008	Good	Good	Good	Good	Good	Good	Good
11683	Dranove	2003	Good	Good	Fair	Good	Good	Good	Good
6505	Elliot	2010	Good	Good	Good	Good	Good	Good	Good
7869	Evans	1997	Good	Good	Fair	Good	Fair	Fair	Fair
4943	Foreman	1995	Fair	Unclear	Poor	Good	Good	Good	Poor
6612	Friedberg	2009	Good	Good	Good	Good	Good	Good	Good
11685	Ghali	1997	Poor	Poor	Good	Good	Good	Good	Fair
6742	Guru	2005	Good	Fair	Fair	Good	Good	Good	Fair
5135	Hannan	1994	Good	Good	Good	Good	Good	Good	Good
5222	Hannan	1994	Good	Good	Good	Good	Good	Good	Good
2191	Hibbard	2005	Unclear	Unclear	Good	Good	Good	Good	Fair
2999	Hibbard	2003	Unclear	Fair	Fair	Fair	Fair	Fair	Fair
11689	Hollenbeak	2008	Good	Good	Good	Good	Good	Good	Good
1761	Howard	2006	Fair	Good	Fair	Good	Good	Good	Fair
1898	Jha	2006	Good	Good	Good	Good	Good	Good	Good
4564	Longo	1997	Fair	N/A	Fair	Good	Good	Good	Fair

<b>Id</b>	<b>Author</b>	<b>Year</b>	<b>Adequate Randomization (for RCTs) or appropriateness of the comparison groups or time periods?</b>	<b>How similar are groups at baseline or how well did the analysis control for differences?</b>	<b>How well does the design or analyses account for important potential confounding?</b>	<b>How well does the study rule out any impact from an unintended exposure or a concurrent intervention or that might bias results?</b>	<b>How well are all potential outcomes prespecified and are the prespecified outcomes reported?</b>	<b>How well are primary outcomes assessed? Were valid and reliable measures used and implemented consistently across all study participants/groups?</b>	<b>Overall QA</b>
4617	Mennemeyer	1997	Good	Fair	Good	Fair	Good	Good	Fair
2222	Moscucci	2005	Fair	Fair	Fair	Good	Good	Fair	Fair
4377	Mukamel	1998	Good	Good	Poor	Good	Good	Good	Fair
11684	Omoigui	1996	Poor	Fair	Fair	Good	Good	Fair	Poor
11686	Peterson	1998	Good	Good	Good	Good	Good	Good	Good
2648	Romano	2004	Good	Good	Fair	Good	Good	Good	Good
11687	Rosenthal	1997	Good	Good	Good	Good	Good	Good	Good
1666	Shabino	2006	Good	Poor	Poor	Fair	Good	Good	Poor
491	Tu	2009	Unclear	Good	Good	Fair	Good	Good	Fair
5572	Vladeck	1988	Good	unclear	unclear	NR	Good	Poor	Poor
10858	Wang	2011	Good	Fair	Good	Good	Good	Good	Good
8037	Werner	2010	Good	Good	Good	Good	Good	Good	Good
	<b>Individual Providers</b>								
6596	Bundorf	2009	Good	Good	Good	Good	Good	Good	Good
7739	Epstein	2010	Fair	Fair	Fair	Fair	Good	Good	Fair
1185	Glance	2008	Good	Fair	Fair	Good	Good	Good	Fair
5135	Hannan	1994	Good	Good	Good	Good	Good	Good	Good
1898	Jha	2006	Good	Good	Good	Good	Good	Good	Good
3127	Mukamel	2002	Good	Unclear	Fair	Good	Good	Good	Fair
3922	Mukamel	2000	NA	Fair	Poor	Good	Good	Good	Fair
4377	Mukamel	1998	Good	Good	Poor	Good	Good	Good	Fair
8047	Mukamel	2004	Good	Fair	Good	Good	Good	Good	Good

<b>Id</b>	<b>Author</b>	<b>Year</b>	<b>Adequate Randomization (for RCTs) or appropriateness of the comparison groups or time periods?</b>	<b>How similar are groups at baseline or how well did the analysis control for differences?</b>	<b>How well does the design or analyses account for important potential confounding?</b>	<b>How well does the study rule out any impact from an unintended exposure or a concurrent intervention or that might bias results?</b>	<b>How well are all potential outcomes prespecified and are the prespecified outcomes reported?</b>	<b>How well are primary outcomes assessed? Were valid and reliable measures used and implemented consistently across all study participants/groups?</b>	<b>Overall QA</b>
790	Ranganathan	2009	Unclear	Not Reported	Fair	Good	Good	Good	Fair
10858	Wang	2011	Good	Fair	Good	Good	Good	Good	Good
2313	Werner	2005	Good	Good	Good	Fair	Good	Good	Good

Abbreviations: NA, not applicable; NR, not reported; QA, quality assessment; RCT, randomized controlled trial.

# Appendix H. Hospitals: Quantitative Evidence

## Section A: Contains columns 1 through 8 of all hospital quantitative studies (H1:H12)

Refid	Author, Year (QA)	1. Study Purpose and/or a priori Hypothesis:	2. Geographic Location	3. Study design	4. Sample/ Population	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics
1182	Apolito 2008 (Good)	To investigate the management and outcome of patients with AMI complicated by cardiogenic shock in New York and other states enrolled in the SHOCK registry.  H1: (Public) Reporting system may have a negative influence on the management of these patients.	New York	Comparison Groups (s) Post test Only	American patients in the SHOCK registry with AMI complicated by cardiogenic shock primarily due to left ventricular pump failure (n= 545)	Public Report: Patients treated at 11 participating New York centers (n=220)  No Public Report: Patients treated at 12 non-New York centers (n=325)	rates of cardiac catheterization, revascularization (PCI and/or CABG), and in-hospital mortality	NY CSRS	New York hospitals required to report; other hospitals not required/no public reporting for them.  Risk-adjusted mortality rates above the confidence interval for the statewide mean in NY results in audits by the NYSDOH and can include penalties and probation.
3184	Baker 2002 (Fair)	To examine temporal trends in risk-adjusted mortality between 1991 and 1997 for Medicare patients hospitalized in Northeast Ohio for six medical conditions: acute MI, CHR, gastrointestinal hemorrhage, COPD, pneumonia, and stroke.	Northeast Ohio/Cleveland metropolitan area	Interrupted Time Series (this article doesn't say, another does.CHQC public reporting started 1993)	Hospitals in Northeast Ohio	30 nonfederal hospitals in Cleveland, OH were compared on 3 measures of mortality rates (In hospital death, 30 day death, and Early post discharge death) of Medicare patients across multiple years.	Mortality: In-hospital death: Death during the index admission  30-day death: Death within 30 days of admission (including in-hospital and post discharge deaths)  Early post discharge death: Discharged alive after the index hospitalization but dying within 30-days of admission.	Cleveland Health Quality Choice (CHQC)	None
2949	Baker 2003 (Fair)	(1) To examine whether hospitals that were identified as mortality outliers were more likely to lose or gain market share compared with hospitals with average mortality. (2) To examine whether hospitals with higher than expected mortality had greater declines in 30-day mortality over time compared with hospitals with average mortality rates.	Cleveland, OH	Interrupted Time Series	Nonfederal Hospitals, N=30(Outliers, n=17) participating in the Cleveland health Quality Choice public reporting program.	12 six-month CHQC study periods between July 1991 and December 1997 (no data for January-June 1992). Comparison: Change in market share during outlier time period vs. non-outlier time period.	Market Share: The number of discharges for 6 general medical conditions at a hospital divided by the total number of general medical admissions at all hospitals participating in CHQC.	Cleveland Health Quality Choice (CHQC)	30 hospitals, with 12 six-month periods of mortality data.

Refid	Author, Year (QA)	1. Study Purpose and/or a priori Hypothesis:	2. Geographic Location	3. Study design	4. Sample/ Population	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics
1512	Bridgewater 2007 (Good)	To study changes in coronary artery surgery in years spanning publication of cardiac surgery mortality data in the UK.	Northwest England	Interrupted Time Series	Data collected on 25,730 consecutive patients undergoing adult cardiac surgery (isolated coronary artery surgery) between April 1, 1997 and March 31, 2005 in the northwest of England.	Pre-public reporting period: April 1997 to March 2001; Post-public reporting period: April 2001-March 2005	Observed Mortality: Any in-hospital death Predicted Mortality: Risk adjusted mortality based on EuroSCORE.  Changes in the number of very high risk patients undergoing coronary artery surgery: Stratified risk spectrum of patients undergoing surgery: low risk <6 EuroSCORE, high risk >=6 EuroSCORE, and very high risk >=11 EuroSCORE	Multiple Reports on named Surgeon and Hospital outcomes in UK	Policy requiring public reporting of hospital specific mortality data
1735	Carey 2006 (Fair)	To study the impact of public reporting and changes in the incidence of PCI and CABG procedures in California.	California	One Group Pretest Posttest	Hospitals in California performing CABG and PCI operations	Pre public report: 1998-2002 Post public report: 2003-2004 Hospitals in both groups: N = 115  Hospitals performing CABG and PCI: N=120 (6 stopped performing during study period and 7 started performing sometime during study period)	Mortality: In-hospital death and 30 day mortality or readmission for repeat procedure  Volume: Number of given procedures (CABG vs PCI)	California Coronary Artery Bypass Graft Mortality Reporting Program	Public reporting prior to 2002 voluntary, after mandatory in CA
2443	Caron 2004 (Fair)	To assess whether improvement in one clinical area was associated with improvements in other areas.	Greater Cleveland, OH	Time Series post only	Hospitals in the Greater Cleveland area. n=27 hospitals for non-obstetrics outcomes. n=20 for obstetrics outcomes.	Comparison across 4 or 5 time points on CHQC outcomes: Acute MI: Length of stay, Mortality; CHF: Length of stay, Mortality; Stroke: Length of stay, Mortality; Obstetrics: Total caesarean delivery rate, primary caesarean delivery rate, vaginal birth after caesarean delivery rate	Acute MI: Length of stay, Mortality; CHF: Length of stay, Mortality; Stroke: Length of stay, Mortality; Obstetrics: Total caesarean delivery rate, primary caesarean delivery rate, vaginal birth after caesarean delivery rate.	Cleveland Health Quality Choice (CHQC)	None
3329	Clough 2002 (Fair)	To determine whether the CHQC had a beneficial effect on inpatient mortality in Cleveland.	Cleveland, OH vs. rest of Ohio	Comparison Group (s) Interrupted Time Series	Hospital mortality rates in Cleveland and Hospital mortality rates in the rest of Ohio	30 hospitals in Cleveland area participated in CHQC vs. hospitals in the rest of Ohio that did not participate in public reporting. Mortality data from 1992 to 1995.	Inpatient mortality	CHQC	None
8164	Cutler 2004 (Fair)	To examine the impact of report cards on the allocation of patients across hospitals.	New York	Time Series post only	Cardiac surgery hospitals on New York states report card	Mortality level of hospitals in high-mortality and low-mortality hospitals.	CABG cases performed, risk-adjusted mortality rate (RAMR)	NY CSRS	None

Refid	Author, Year (QA)	1. Study Purpose and/or a priori Hypothesis:	2. Geographic Location	3. Study design	4. Sample/ Population	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics
11683	Dranove 2003 (Good)	To develop and framework and test three potential effects of report cards on the treatment of cardiac illness.	New York and Pennsylvania	Interrupted Time Series	Cohorts of Acute Myocardial Infarction (AMI) patients and patients receiving CABG in New York and Pennsylvania from 1987-1994	Assuming NY introduced report cards in 1991 and PA in 1993: NY: 4 years Pre and 3 years Post PA: 6 years Pre and 1 year Post  Also Compare NY to other states that do not have public reporting.	Hospital Level Analysis: 1. Mean of the illness severity before admission or treatment of hospital. This outcome is estimated by: A. Mean of Patient's total hospital expenditures one year prior to admission B. Mean of patients' total days in hospital one year prior to admission Patient Level Analysis: 1. Illness severity in the year prior to treatment 2. Overall intensity of treatment in the year after admission 3. Whether patients received CABG, PTCA or Cath in the year after admission with AMI 4. All-case mortality and cardiac complications such as readmission for heart failure in the year after admission	NY CSRS and PA CABG Guide	None
941	Dranove 2008 (Good)	To propose and implement a methodology to assess the effectiveness of the "news" that report cards provide to the market.	New York	Interrupted Time Series	Hospitals (n=18) in the NYC metropolitan area and CABG patients from the counties in the same area (1989, n=6978; 1990, n=7916; 1991, n=8960).	Hospital demand pre and post report card implementation; Pre: 1989, Post: 1991	Hospital Demand	NY CSRS	None
6505	Elliott 2010 (Good)	To assess how patients' experiences with inpatient care are changing since public reporting	Across USA	One Group Pretest Posttest	Hospitals reporting on the Hospital Compare website between 2006 and 2008 with reporting in 2008 and 2009	1) Reporting at 2008 vs. reporting at 2009 2) Newly participating hospitals vs. original participating hospitals 3) Hospitals with <100 beds vs. hospitals with >100 beds	HCAHPS survey completed by patients	HCAHPS	Annual reporting, 2008 and 2009 All hospitals participating
7869	Evans 1997 (Fair)	To document responses of Pennsylvania hospitals to the public dissemination by the Pennsylvania Health Care Cost Containment Council (PHC4) of mandated hospital disclosures of financial and nonfinancial information.	Pennsylvania	One Group Posttest Only	All Pennsylvania acute care hospitals	One year to another: 1990 vs. 1992	Change in hospital efficiency measures (length of stay and charges) Changes in outcome measures	PHC4: HER	None

Refid	Author, Year (QA)	1. Study Purpose and/or a priori Hypothesis:	2. Geographic Location	3. Study design	4. Sample/ Population	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics
4943	Foreman 1995 (Poor)	To examine whether Pennsylvania's Health Care Cost Containment Council (PHC4) public reports led to market changes. Specifically, to determine whether hospitals that received high or low quality ratings experienced growth or decline in patient admissions	Pennsylvania	One Group Posttest Only	Hospitals in Pennsylvania n=156 (27 of 183 excluded due to missing data)	Pre: fully released data (for 1989 or 1990, released in 1991 or 1992) Post: Publicly released data (for 1990, released in 1992)  Note: not all data in the post group were public.	Change in Yearly Number of Hospital Patients by high or low quality (Quality determined by mortality rates)	Hospital Effectiveness Report (HER)  Consumer Guide to Coronary Artery Bypass Graft Surgery (CABG Guide)	Only one year of publicly reported data for some of the hospitals. Other hospitals did not have any publicly reported data, but privately/internally reported data were available to physicians for referrals.
6612	Friedberg 2009 (Good)	To determine whether public reporting has been associated with over-diagnosis of pneumonia, excessive antibiotic use, or inappropriate prioritization of patients with respiratory symptoms.	USA	Interrupted Time Series	Patients at least 18 years old visiting EDs between 2001-2005 with primary respiratory symptoms (excluding conditions limited to upper respiratory tract) at hospitals with Antibiotic Timing Scores for at least 25 observations	Pre-Public Report: Before January 1, 2004 Post-Public Report: After January 1, 2004	ED diagnosis: Pneumonia, Bronchitis, Congestive heart failure (CHF), Other Antibiotic use: first dose of antibiotics within 4 hours of hospital arrival; inappropriate use of antibiotics classified as antibiotic use in visits for asthma and CHF when pneumonia not present Waiting time to see a physician: not described	One of 10 Hospital-level performance measures reported by the Hospital Quality Alliance	Began public reporting in 2004; HQA receives performance data from more than 98% of US acute care hospitals
11685	Ghali, 1997 (Fair)	To compare trends in mortality after CABG surgery in Massachusetts with the decreases from New York and northern New England	Massachusetts	Comparison Group (s) Time Series Post Only	All CABG cases from fiscal years 1990, 1992, 1994 in Massachusetts at all 12 hospitals performing CABG surgeries: Case Selection from New York and northern New England included cases having undergone isolated CABG procedure. 1990 N=5395; 1992 N=5,818; 1994 N=5,915 from 12 hospitals	No Report: Massachusetts CABG patients Public report and outcomes feedback: New York and Northern New England CABG patients	Observed and risk-adjusted in-hospital mortality  Changes in Patient Care linked to Performance Information	NY CSRS and Northern New England	None
6742	Guru 2006 (Fair)	To evaluate the differences in patient characteristics and outcomes observed during the transition from no reporting to confidential, and ultimately public perform report cards for CABG surgery in Ontario	Ontario, Canada	Interrupted Time Series	All patients undergoing isolated CABG surgery at 9 cardiac surgery institutions in Ontario between Sept. 1, 1991 and March 31, 2002 (n = 67,693)	No Report: 1991 to 1994 (n = 12691) Confidential Report: 1995-1998 (n = 32,272) Public Report: 1999-2001 (n = 22,730)	thirty-day adjusted mortality	Ontario Cardiac Reports	All CABG surgeons agreed to publicly report outcomes (i.e., not mandated, voluntary). Confidential reporting instituted prior to public reporting

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5135	Hannan 1994 (Good)	1) To examine changes in the risk-adjusted CABG outcomes among providers that occurred during 1989-1992 as a function of the risk-adjusted mortality in 1989.  2) To examine changes in the volume of patients undergoing CABG as a function of the performance of providers in 1989.	New York	Interrupted Time Series	30 providers (hospitals and surgeons) performing CABG surgeries in New York state	Baseline: Three different groups of ten created using RAMR prior to public release. Then look at performance before and after public report.	Intra-group changes in RAMR: RAMR for each tercile (Group 1= lowest RAMR, Group 2 = middle RAMR, Group 3 = Highest RAMR) in initial period (1989 for hospitals; 1989 to 1990 for surgeons) compared to RAMR for same tercile in 1992.  For surgeons: Same breakdown of terciles, but groups 1 and 2 have an N of 32 each, while group 3 has an N of 31  Outlier status (high outliers, non-outliers, and low outliers, with low outliers having significantly lower than expected mortality rates)  Volume of procedures: tracked using same tercile and outlier groupings.	NY CSRS	Public Reporting of CABG for Hospitals and Surgeons required in NY
5222	Hannan 1994b (Good)	To assess changes in outcomes of CABG surgery in NY related to CABG report card from 1989 through 1992.	New York	Interrupted Time Series	30 New York Hospitals. 57,187 patients undergoing CABG surgery in New York between 1989 and 1992	Change over time after the release of report cards. Baseline: 1989	Risk-adjusted mortality rate, Expected mortality rate, CABG surgery volume, Relationship between hospital RAMR and average severity of illness of patients	NY CSRS	Public reporting mandatory
2999	Hibbard 2003 (Fair)	To evaluate the impact on quality improvement of reporting hospital performance publicly versus privately back to the hospital.	Wisconsin	Comparison Groups (s) Pretest Posttest (2 of 3 groups Randomly Assigned)	Wisconsin hospitals -24 hospitals utilizing public reporting -98 hospitals randomized to either private reporting or no reporting	Public reporting hospitals (n=24) Private reporting hospitals (n=41) No reporting hospitals (n=46)	Increase in QI activities in obstetrics and cardiac care (0-7 possible QI activities) Public image perception (0-5 scale)	QualityCounts	None
2191	Hibbard 2005 (Fair)	To assess hospital's performance in the 2 years following the release of the report	Wisconsin	Comparison Groups (s) Pretest Posttest (2 of 3 groups Randomly Assigned)	24 hospitals in south central Wisconsin. And survey on long term impacts among community members (n = 803).	Hospitals in report vs. hospitals given a report of just their performance vs. hospitals that received no report	Improvements in performance overall and in clinical areas	QualityCounts	None



Refid	Author, Year (QA)	1. Study Purpose and/or a priori Hypothesis:	2. Geographic Location	3. Study design	4. Sample/ Population	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics
11689	Hollenbeak 2008 (Good)	To identify associations between intensive public reporting and in-hospital mortality.	Pennsylvania	Comparison Groups (s) Pretest Posttest	Patients treated for 6 acute conditions: AMI, congestive heart failure, hemorrhagic stroke, ischemic stroke, pneumonia, and sepsis.	<p>Group 1, Time 1: Pennsylvania patients during period of 'limited' public reporting, from 1997-1999 (n=515,266; 206 hospitals)</p> <p>Group 1, Time 2: Pennsylvania patients during period of 'intensive' public reporting, from 2000-2003 (n=689,006; 200 hospitals)</p> <p>Comparison (Propensity matched to Pennsylvania):</p> <p>Group 2, Time 1: Patients in different states with limited public reporting, from 1997-1999 (propensity matched to Pennsylvania) (n=103,864; 53 hospitals)</p> <p>Group 2, Time 2: Patients in different states with limited public reporting, from 2000-2003 (n=59,239; 34 hospitals)</p> <p>Group 3: Limited reporting in CO and TX, from 1997-1999 (only 3 outcomes measures: AMI, CHF, pneumonia; n=21,952; 8 hospitals)</p> <p>Group 4: Intensive reporting in CO, TX, and CA from 200-2003 (only 3 outcomes measures: AMI, CHF, Pneumonia; n=9,456; 7 Hospitals)</p> <p>4 Major comparisons:</p> <p>1) Intensive Pennsylvania vs limited non-Pennsylvania</p> <p>2) Limited Pennsylvania vs limited non-Pennsylvania (see note)</p> <p>3) Limited PA vs Limited CO and TX (3 Outcomes)</p> <p>4) Intensive PA vs Intensive CA, CO, TX (3 Outcomes)</p> <p>N=168,104 Matched patient pairs</p>	In-hospital mortality	PA Hospital Effectiveness/ Performance Report	None
1761	Howard 2006 (Fair)	To determine whether report cards influence the number of kidney waiting list registrations and lie donor transplants at transplant hospitals.	USA	Time Series post only	Transplant Centers in the US	Post only data comparing patient transplant registrations and hospital performance across time Intervention: Internet reporting of the Scientific Registry of Transplant Recipients	Number of patients choosing transplant center during each report card period.	University Renal Research and Education Association semi annual reports on kidney transplant graph survival	Released every 6 months online.

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1898	Jha 2006 (Good)	<p>To determine if high or low performance by surgeons or hospitals predicts performance in the period when data are most likely to be used by consumers.</p> <p>To determine whether hospital or surgeon performance affects patient market share.</p> <p>To assess whether surgeon performance is associated with likelihood of ceasing practice.</p>	New York	Time Series post only	hospitals and cardiac surgeons in New York	<p>Intervention: Public Release of Cardiac Performance for hospitals (yearly) and surgeons (released yearly for three year periods)</p> <p>Baseline: How well hospitals performed on report cards released in 1995 (performance data for 1993); How well surgeons performed on the 1999 report card (performance Data for 1997)</p> <p>Post: How well hospitals performed in 1996 (a year after release); How well surgeons performed in 2000 (a year after release)</p> <p>(For Market Share)</p> <p>Pre: Hospital or surgeon market share prior to the release of report card</p> <p>Post: Hospital or surgeon market share one year after release of report card</p> <p>(For Surgeons Quitting)</p> <p>Pre: Performing surgeries prior to release</p> <p>Post: Discontinuing surgeries over the course of two years from release of public data</p>	<p>Performance: each hospital's or surgeon's RAMR.</p> <p>Market Share: number of cases of isolated CABG surgeries performed by a given surgeon or hospital in a given time period, divided by the total number of isolated CABG surgeries performed by all surgeons/hospitals in NY during that period.</p> <p>Discontinuation of surgeries: Any surgeon who did not perform a single surgery in a given calendar year assumed to have left the system.</p>	NY CSRS	Required publication of performance data for cardiac surgeries in NY
4564	Longo 1997 (Fair)	To examine the impact of an obstetrics consumer report developed and issued by the Missouri Department of Health on hospital behavior.	Missouri	One Group Pretest Posttest	Hospitals in Missouri, N=82. Response rate=93% (82/88).	Change after release of public report among 82 Hospitals listed in the Show Me Buyer's Guide: Obstetrical Services published in 1993. Data collected 1994.	<p>Number of facilities that previously did not have service, but instituted service after guide published.</p> <p>Number of facilities with policies changed, planned to change, or with change under discussion.</p> <p>Obstetrical outcome trends.</p>	ShowMe Buyers Guide: Obstetrical Services	None
4617	Menemeyer 1997 (Fair)	To examine whether the HCFA data releases had an impact on community hospital discharges over the period 1984 to 1992.	USA	Interrupted Time Series	All community hospitals with a standardized HCFA mortality rate of more than one standard deviation from the mean in any year during the period 1984-2002. In addition, 50% of hospitals that were never outliers under this definition. 1983 data included as well for changes over time (baseline). Over nine year period, n= 23,564.	Baseline/Pre-HCFA mortality release: 1983; Intervention: yearly release of HCFA mortality report. Change in hospital discharges attributed to HFCA release of information verses other sources such as: Media attention: Dummy variables relating to newspaper articles reporting either high or low mortality outlier at specific hospitals and whether presence of a favorable story, unfavorable story, government action, and unusual death.	Use of hospital: change in yearly discharges	HCFA mortality report	Media Coverage: whether or not the media(specifically newspapers) report rates and whether or not the media include stories that have positive or negative spins.

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2222	Moscucci 2005 (Fair)	To compare demographic data, indications, and in-hospital mortality from large multicenter PCI databases in Michigan, where public reporting is not mandated, and in New York where it is.	Michigan and New York	Comparison Groups (s) Post test Only	No public reporting: Hospitals in Michigan (n=8) performing 11,374 consecutive PCIs from 1998-1999 Public Reporting: Hospitals in New York (n=34) performing 69,048 consecutive PCIs during same time period.	No public reporting: Michigan Public Reporting: New York	In-hospital mortality	NY CSRS	None
4377	Mukamel, 1998 (Fair)	To test the hypotheses that hospitals and surgeons with better outcomes reported in the NYS Cardiac Surgery Reports experience a relative increase in their market share and prices.	New York	One Group Posttest Only	Hospitals and surgeons in New York	Compare hospitals over different years (1990 vs. 1991 vs. 1992)	Market shares	NY CSRS	None
11684	Omoigui 1996 (Poor)	It has been suggested that this program played a significant role in the 41% decrease in the risk-adjusted mortality rate between 1989 and 1992. We hypothesized that some high-risk patients had migrated out of state for surgery. The purpose of this study was to determine whether cross-border risk-shifting resulted in changes in referral source case-mix and outcome from 1989 through 1993 at the Cleveland Clinic, a major regional, national, and international referral center located in the city of Cleveland, Ohio, 110 miles from the western border of New York state.	New York and Cleveland, OH	Multiple Group Time Series	n=9442 isolated CABG operations undertaken at the Cleveland clinic between Jan 1, 1989 to December 31, 1993.	Time trends of mortality, morbidity and referral case-mix at the Cleveland clinic. Post Only - 1989 to 1993	Mortality	NY CSRS	None

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11686	Peterson 1998 (Good)	To examine the effects of provider profiling on bypass surgery access and outcomes in elderly patients in New York	New York	Interrupted Time Series	All Medicare patients age >=65 yrs who underwent bypass surgery between 1987 and 1992 in a US hospital. n=39,396 in NY Hospitals n=662,675 in non-NY (US)	2 yrs Pre-public reporting: 1987-89 2 yrs Post-public reporting: 1990-92	1. Percentage of patients going out-of-state for bypass surgery 2. Use of bypass surgery following a MI had declined in NY's elderly since the initiation of report cards 3. Whether bypass surgery outcomes were improving more rapidly in NY than in the rest of the nation.	NY CSRS	None
2648	Romano 2004 (Good)	To determine whether hospitals recognized as performance outliers (either lower or higher than expected) experience volume changes after publication of a report card.  H1: Hospitals with lower-than-expected mortality or complication rates experience significant volume increases, and hospitals with higher-than-expected mortality or complication rates experience significant volume decreases in the year after publication of a report card.  H2: Hospitals with lower-than-expected mortality or complication rates attract more patients from long distances, or from outside their usual catchment areas, after a report is published. Labeled as "bypass effect," and vice versa for higher-than-expected hospitals.	New York and California	Times Series Post Only	Outlier hospitals in New York and California NY using CSRS report from December 1992, December 1993, and June 1995CA using CHOP report from December 1993 and from May 1996	Pre: monthly volume prior to report for each specific hospital Post: monthly volume for each specific hospital up to a year later	Volume: total number of patients with a topic condition or procedure, or related condition or procedure, who were admitted to a specific hospital in a specific calendar month.  CA Hospitals volume by: AMI, AMI-related procedures (CABG, Percutaneous coronary angioplasty, congestive heart failure), Cervical Disectomy, Lumbar Disectomy, Disectomy-related (Back or neck procedures, Medical back problems, Knee arthroplasty, Hip arthroplasty)  NY Hospitals monthly volume by: CABG CABG-related procedures (AMI, Percutaneous coronary angioplasty, Congestive heart failure)	CHOP (CA) and CSRS (NY)	Both states require public reporting

Refid	Author, Year (QA)	1. Study Purpose and/or a priori Hypothesis:	2. Geographic Location	3. Study design	4. Sample/ Population	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics
2648	Romano 2004 (Good) Cont.	H3: Hospitals with lower-than-expected mortality or complication rates lead to an increased volume of clinically related conditions or procedures, and vice versa for higher-than-expected hospitals.  H4: Certain sociodemographic groups are more likely to hear about the release of a hospital report card and are better able to more likely to use this information to select a hospital than other groups.							
11687	Rosenthal 1997 (Good)	To determine changes in hospital mortality that may have occurred in association with the Cleveland Health Quality Choice (CHQC) Program	Cleveland, OH	Interrupted Time Series	30 hospitals in Northern Ohio	Before reporting vs. after reporting	Changes in mortality rates	CHQC	None
1666	Shabino 2006 (Poor)	To report on CheckPoint progress and to propose new measures.	Wisconsin	One Group Pretest Posttest	Hospitals in Wisconsin, December 2004, n=115; September 2006, n=117	Changes in AMI, CHF, and Pneumonia outcomes between: Early post-public reporting (December 2004) and 2 years after public reporting (September 2006)	Acute MI outcomes: % on aspirin at arrival, % on aspirin at discharge, % beta blocker at arrival, % beta blocker at discharge, % ACEI/ARB Left ventricular systolic dysfunction, smoking counseling.  CHF outcomes: % Left ventricular function assessment, % ACEI/ARB Left ventricular function assessment, % Smoking counseling, % Discharge instructions  Pneumonia outcomes: % Oxygen assessment, % pneumonia vaccine, % smoking counseling, % antibiotic within 4 hours	Wisconsin CheckPoint	None

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491	Tu 2009 (Fair)	to evaluate whether the public release of data on cardiac quality indicators effectively stimulates hospitals to undertake quality improvement activities	Ontario, Canada	Randomized Delayed Intervention Trial (hospitals randomized to early public reporting, or reporting 21 months later)	Acute Care Hospitals in Ontario treating more than 15 patients with AMI per year.	Both groups receive feedback. One receives early feedback (January 2004) and then the data are publicly released and the media report the results; the other receives delayed feedback (September 2005) and then public release, but no media feedback.	Primary: Mean performance on each of 2 composite process-of-care indicators: a)percentage of opportunities for applying each of 12 AMI indicators that were fulfilled b) CHF quality indicator "defined in a similar manner" using 6 CHF process-of-care indicators.  Secondary: 1 year and 30 day Hospital mortality; individual indicators creating the primary composite indicators; hospital report card impact survey results.	AMI and CHF Process Measures for acute care hospital	None
5572	Vladeck 1988 (Poor)	Hypothesize that occupancy in hospitals with higher-than-expected death rates would decline after public release; occupancy in hospitals with as-expected death rates would not change; and occupancy in hospitals with lower-than-expected mortality would rise.	New York	One Group Pretest Posttest	Occupancy rates for all New York City general acute care hospitals; n=70	Group 1: NY Hospitals with higher-than-expected mortality rates (n=14); Group 2: NY Hospitals with as-expected mortality rates (n= 47); Group 3: NY Hospitals with lower-than-expected mortality rates (n=9)  Pre: five calendar quarters preceding March 12, 1986 release of HCFA data Post: three calendar quarters following release	Occupancy rates	HCFA mortality report	New York City metropolitan hospitals overrepresented among 269 outlier hospitals: 45 were from New York City or from surrounding counties; two-thirds had higher than expected mortality, one-third had lower-than-expected rates.
10858	Wang 2011 (Good)	Examines the impact of CABG report cards on a provider's aggregate volume and volume by patient severity and then employ a mixed logit model to investigate the matching between patients and providers	Pennsylvania	Times Series Post Only	PA residents (aged 30 and above) who were undergoing an isolated CABG procedure in PA hospitals and who were admitted between Q3 1998 and Q1 of 2006. n= 114,039)	Post Only: 1998 to 2006	Hospital Quarterly Volume Surgeon Quarterly Volume	PA CABG Guide	None

Refid	Author, Year (QA)	1. Study Purpose and/or a priori Hypothesis:	2. Geographic Location	3. Study design	4. Sample/ Population	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics
8037	Werner 2010 (Good)	To examine changes in hospital process performance in the first three years after Hospital Compare was initiated and test whether these changes in performance were correlated with changes in hospital mortality rates, length of stay, and readmission rates	USA	Times Series Post Only	3476 acute care non federal US hospitals that publicly reported quality information on the CMS Hospital Compare website from 2004-2006	Change in performance level between 2004 and 2006 of low vs. low-middle vs. middle-high vs. high performing hospitals	Performance on individual and composite performance measures Change in hospital performance from 2004 to 2006	CMS Hospital Compare	None

**Section B: Contains columns 9 through 13 of all hospital quantitative studies (H13: H31)**

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
1182	Apolito 2008 (Good)	None	Patients for cardiac surgery	None	<p>New York vs Non-New York: Coronary Angiography (53.2% vs 68.9%, p&lt;.001); PCI (23.2% vs 38.2%, p&lt;.001) and PCI or CABG (35.5% vs 50.8%, p&lt;.001)</p> <p>Logistic Regression for Management of NY vs non-NY patients with predominant LV failure: (OR, 95% CI)</p> <p>Coronary angiography: .51***, .36-.73 Coronary angiography (propensity adjusted): .46***, .31-.68 PCI and/or CABG: .53***, .38-.76 PCI and/or CABG (propensity adjusted): .59**, .40-.87 PCI: .49***, .33-.72 PCI (propensity adjusted): .51**, .33-.77 CABG: .92, .57-1.50 CABG (propensity adjusted): 1.06, .62-1.82</p> <p>NY Vs non-NY propensity score-adjusted in- hospital mortality (overall, and by revascularization status) of patients with predominant LV failure: (OR, 95%CI)</p> <p>Unadjusted NY vs. non-NY: 1.30, .92-1.85 Adjusted by Propensity score: NY vs Non-NY: 1.5*, 1.01-2.21 Propensity score: .93, .85-1.02</p> <p>In-hospital mortality, adjusting for PCI/CABG, the interaction of PCI/CABG and NY status and Propensity score: PCI and/or CABG by NY versus non-NY interaction: P=.008 PCI and/or CABG: NY vs. Non-NY: .73, .4-1.32 No PCI and/or CABG: NY vs. non-NY: 2.12**, 1.2-3.75 Propensity score: .89*, .81-.98</p> <p>*** p&lt;.001, **p&lt;=.01, *p&lt;=.05</p>	None



Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
3184	Baker 2002 (Fair)	Patients or Payers	Selection of hospitals, however consequences are not dire.	<p>Unadjusted results:  RR for in hospital death:  Acute MI: -20.2% (95% CI, -31.1 to -8.0)  CHF: -4.7% (95% CI, -55.4 to -36.2)  COPD: -49.6% (95% CI, -65.4 to -26.8)  Pneumonia: -23.0% (95% CI, -32.1 to -12.1)  GI hemorrhage or Stroke: NS</p> <p>RR for Early post discharge mortality rate:  Acute MI: 100.1% (95% CI, 43.2 to 178.9)  CHF: 57.4% (95% CI, 28.0 to 94.6)  GI hemorrhage: 101.0% (95% CI, 13.7 to 189.0)  Pneumonia: 85.8% (95% CI, 54.3 to 123.8)  Stroke: 121.4% (95% CI, 71.1 to 184.7)  COPD: NS</p> <p>RR for 30-day mortality:  CHF: -12.4% (95% CI, -23.7 to 0.0)  Stroke: 25.3 (95% CI, 10.0 to 42.3)  Acute MI, GI hemorrhage, Pneumonia, COPD: NS</p> <p>Risk-adjusted mortality rates:  In hospital mortality:  Acute MI, GI hemorrhage, CHF, Pneumonia, COPD had significant declines. Stroke was NS.</p> <p>Post discharge mortality rates:  Acute MI, GI hemorrhage, CHF, Pneumonia, Stroke had significant increases. COPD was NS.</p> <p>30-day mortality rates:  CHF: absolute decline 1.4% (95% CI, -2.5 to -0.1)  COPD: absolute decline 1.6% (95% CI, -2.8 to 0.0)  Stroke: absolute increase 4.3% (95% CI, 1.8% to 7.1)</p>	None	None
2949	Baker 2003 (Fair)	Patients and Payers have access to the data.	Hospital selection for future use.	Hospital outlier status was not significantly related to changes in risk-adjusted 30-day mortality. Between 1991 and 1997, the absolute change in risk-adjusted 30-day mortality at "average" hospitals was -0.5% (95%CI: -1.8-1.0%). Risk adjusted mortality declined only slightly at hospitals classified as "below average" (-0.8%, 95%CI: -2.9-1.8%) and at hospitals classified as "worst" (-0.4%; 95%CI: -2.3-1.7)	None	None
1512	Bridgewater 2007 (Good)	Motivation to have better outcomes and possibly to avoid operating on high-risk patients	Patients selected by provider/surgeon.	<p>Observed Mortality decreased from 2.4% in 1997-98 to 1.8% in 2004-5 (p=.014)</p> <p>Expected Mortality increased from 3.0% in 1997-8 to 3.5% in 2004-5 (p&lt;.001)</p> <p>Observed to Expected Mortality decreased from .8 in 1997-8 to .51 in 2004-5 (p&lt;.05)</p>	<p>Average number of patients at low; high; and very high risk: Pre-public reporting: 2694 (84.6%); 449 (14.1%); 41 (1.3%)  Post-public reporting: 2654 (81.7%); 547 (16.8%); 47 (1.4%)</p> <p>High risk patients underwent surgery more after public reporting: 13.3% in 1997-98 vs 16.6% in 2004-5 (p&lt;.001)</p> <p>No statistically significant change in very high risk after public reporting: 1.1% in 1997-8 vs 1.4% in 2004-5 (p=.37)</p>	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
1735	Carey 2006 (Fair)	None	Cardiac Surgery	<p>Overall, the observed mortality to expected mortality ratio (O/E) declined after public reporting.</p> <p>Observed to Expected Ratio, by Procedure: [Pre-Public Reporting (1998-2002); Public Reporting (2003-2004)]</p> <p>CABG: 1.17; .97  PCI: 1.08; .98  CABG+: 1.07; .98  Valve: 1.13; .97</p>	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
2443	Caron 2004 (Fair)	Patients/families or payers	Choice of hospital. Consequences of a bad choice would not necessarily be dire, but could have significant consequences on length of stay and even mortality.	<p>Descriptive data: Means and Percentage Improvement, Time 1 vs Time 2 vs Time 3 vs Time 4 vs Time 5; % improved (lower scores are improvements for non-obstetric outcomes, higher scores are improvements for obstetric outcomes)</p> <p>Acute MI length of stay (LOS): 7.51 vs 7.04 vs 6.55 vs 6.15 vs 6.09; 93%</p> <p>Acute MI mortality: 10.79 vs 10.95 vs 11.30 vs 11.57 vs 10.27; 59%</p> <p>CHF LOS: 6.03 vs 5.80 vs 5.15 vs 4.95 vs 4.73; 100%</p> <p>CHF mortality: 6.18 vs 5.77 vs 5.02 vs 4.25 vs 4.05; 85%</p> <p>Stroke LOS: 7.41 vs 6.98 vs 6.07 vs 5.71 vs 5.30; 100%</p> <p>Stroke mortality: 9.95 vs 9.68 vs 8.72 vs 9.40 vs 9.59; 59%</p> <p>Primary caesarean delivery rate (not used in analyses): 15.95 vs 14.99 vs 13.36 vs 12.19; 76%</p> <p>VBAC delivery rate: 34.85 vs 40.16 vs 44.76 vs 46.52; 67%</p> <p>Total caesarean delivery rate: 20.20 vs 21.30 vs 19.72 vs 17.82; 67%</p> <p>----</p> <p>Significant Bivariate Pearson's correlations between 7 outcomes from one year to the next (correlation; P):</p> <p>Acute MI LOS: Acute MI mortality (0.337; .000), CHF LOS (0.781; .000), CHF mortality (0.394; .000), Stroke LOS (0.757; .000), Stroke mortality (0.274; .005), VBAC and total caesarean delivery rate NS.</p> <p>Acute MI Mortality: CHF LOS (0.261; .007), CHF mortality (0.227; .020), Stroke LOS (0.208; .033), Stroke mortality, VBAC and total caesarean delivery rate NS.</p> <p>CHF LOS: CHF mortality (.477; 0.000), Stroke LOS (0.754; .000), Stroke mortality, VBAC and total caesarean delivery rate NS.</p> <p>CHF mortality: Stroke LOS (0.387; .000), Stroke mortality, VBAC and total caesarean delivery rate NS.</p> <p>Stroke LOS: Stroke mortality, VBAC and caesarean delivery rate NS.</p> <p>Stroke mortality: VBAC and total caesarean rate NS.</p> <p>VBAC delivery rate: total caesarean rate NS.</p> <p>*Positive correlations signify that hospitals that are doing well (mean value) in this year would also do well in the next year.</p> <p>---</p> <p>Repeated measures ANOVA results:</p> <p>Between hospitals: 26 df, F=5.0096, P=.0001</p> <p>Time: 783 df, F=2.2157, P=.0001</p> <p>*Between hospitals significance indicates that while hospitals made improvements overall, their degree of success varied. This indicates that those hospitals that devoted more effort to an overall quality approach tended to be more successful. Time significance indicates that time was a contributor to both hospitals and outcomes.</p>	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
3329	Clough 2002 (Fair)	Patients and Payers	Hospital use	<p>Overall rate of Change: Cleveland decline in mortality: slope, -.218% per 6 months (95%CI: -.278% to -.159%) Ohio decline in mortality: slope, -.188% per 6 months (95%CI: -.234% to -.143%) Difference in slopes, NS (P=.35)</p> <p>Rates of Change by Diagnosis/Procedure: Cleveland vs. rest of Ohio, P-value Acute MI: -.164 vs. -.309, P=.29 CHF: -.338 vs. -.216, P=.10 Stroke: -.249 vs. -.166, P=.41 Lower bowel resection: -.487 vs. +.016, P=.052 CABG: -.166 vs. -.105, P=.31 GI Hemorrhage: -.128 vs. .74, P=.53 COPD: -.130 vs. -.095, P=.54 Pneumonia: -.333 vs. -.208, P=.012</p>	None	None
8164	Cutler 2004 (Fair)	None	None	<p>Change in CABG cases: High-mortality hospital vs. low-mortality hospital All patients 1-12 months after being flagged: -4.9 vs. 3.0 (p&lt;0.05) 13-24 months after being flagged: -3.1 vs. -0.8 (NS) 25-36 months after being flagged: -3.7 vs. -1.8 (NS) &gt;36 months after being flagged: -7.1 vs. -7.1 (NS) Low-severity patients 1-12 months after being flagged: -5.4 vs. 1.5 (p&lt;0.01) 13-24 months after being flagged: -3.7 vs. -0.3 (NS) 25-36 months after being flagged: -4.0 vs. -1.9 (NS) &gt;36 months after being flagged: -5.9 vs. -3.2 High-severity patients 1-12 months after being flagged: 0.6 vs. 1.5 (NS) 13-24 months after being flagged: 0.7 vs. -0.6 (NS) 25-36 months after being flagged: 0.4 vs. 0.0 (NS) &gt;36 months after being flagged: -1.2 vs. -4.0 (NS) ----- Change in RAMR: High-mortality hospital vs. low-mortality hospital 1-12 months after being flagged: -1.2 vs. 0.2 (p&lt;0.01) 13-24 months after being flagged: -1.3 vs. 0.3 (NS) 25-36 months after being flagged: -1.3 vs. 0.3 (p&lt;0.01) &gt;36 months after being flagged: -0.6 vs. 0.2 (NS)</p>	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
11683	Dranove 2003 (Good)	None	None	<p>Baseline 1990 (prior to report card) vs 1994 (after report card):</p> <p>Prior year's expenditures for AMI patients in New York and PA increased roughly by 8.5%, whereas expenditures in all other states increased by 9.4%. There was no differential in increase of price.</p> <p>Hospital Level Analysis:</p> <p>A. Mean of Patient's total hospital expenditures one year prior to admission Beneficiaries with CABG (Report Card NY 1993 and PA 1993) anti-ln(-5.30)** Beneficiaries with AMI anti-ln(1.55)</p> <p>B. Mean of patients' total days in hospital one year prior to admission Beneficiaries with AMI anti-ln(-4.51)** Beneficiaries with AMI anti-ln(1.56)</p>	None	None
941	Dranove 2008 (Good)	Patients, families, payers	Hospital choice. Not dire consequences for most decisions.	None	None	None
6505	Elliott 2010 (Good)	Patient/families	None	<p>% of positive responses and difference in % change to responses to survey</p> <p>Reporting by year: 2008 vs. 2009</p> <p>Nurse communication: 72.7 vs. 73.1; 0.4; p&lt;0.001</p> <p>Doctor communication: 79.1 vs. 79.0; -0.1; not significant</p> <p>Responsiveness of hospital staff: 59.9 vs. 60.8; 0.9; p&lt;0.001</p> <p>Pain management: 67.1 vs. 67.5; 0.4; p&lt;0.001</p> <p>Communication about medicines: 57.5 vs. 58.0; 0.5; p&lt;0.001</p> <p>Cleanliness of hospital: 67.9 vs. 68.3; 0.4; p&lt;0.001</p> <p>Quietness of hospital: 53.6 vs. 54.5; 0.8; p&lt;0.001</p> <p>Discharge information: 79.1 vs. 79.9; 0.8; p&lt;0.001</p> <p>Would recommend: 67.1 vs. 67.4; 0.3; p&lt;0.05</p> <p>----</p> <p>Report by participation status: original vs. new</p> <p>Nurse communication: 73.1 vs. 75.7; 2.6; p&lt;0.01</p> <p>Doctor communication: 79.0 vs. 81.9; 2.9; p&lt;0.001</p> <p>Responsiveness of hospital staff: 60.8 vs. 65.9; 5.0; p&lt;0.001</p> <p>Pain management: 67.5 vs. 69.9; 2.4; p&lt;0.01</p> <p>Communication about medicines: 58.0 vs. 61.1; 3.1; p&lt;0.05</p> <p>Cleanliness of hospital: 68.3 vs. 72.6; 4.3; p&lt;0.001</p> <p>Quietness of hospital: 54.5 vs. 61.2; 6.7; p&lt;0.001</p> <p>Discharge information: 79.9 vs. 80.0; 0.1; not significant</p> <p>Would recommend: 67.4 vs. 68.5; 1.1; not significant</p>	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
7869	Evans 1997 (Fair)	None	None	Change in Mortality and Change in Morbidity from 1990 to 1992 Actual mortality, less expected mortality divided by patient volume for 1990 for diagnostic related groups: -0.8518; p<0.01 and -- Actual morbidity, less expected morbidity divided by patient volume for 1990 for diagnostic related groups: -- and -0.9452; p<0.01 Poor mortality in 1990: -0.013; p<0.05 and -- Poor morbidity in 1990: -- and -0.0003; NS Poor operating margin ratio in 1990: 0.0013; p<0.01 and -0.0007; NS Economic impact of diagnostic related groups: -0.0019; NS and -0.0517; p<0.05 Herfindahl competition index: -0.0002; p<0.01 and 0.000; NS Size of hospital: 0.0089; p<0.01 and 0.0077; p<0.05 Teaching hospital: 0.0005; NS and 0.0001; NS	None	None
4943	Foreman 1995 (Poor)	None	Hospitals	None	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
6612	Friedberg 2009 (Good)	None	None	None	<p>ED Visits for Respiratory Symptoms: Diagnosis Rates, Antibiotic Administration, and Waiting Times to see a Physician, 2001-2005: [% of visits for pre-reporting: 2001, 2002, 2003; public reporting: 2004, 2005 (P value for trend)]</p> <p>Diagnosis:  Pneumonia: 11, 9, 12; 11, 10 (.07)  Bronchitis: 26, 25, 26; 23 26 (.47)  CHF: 8, 10, 10; 9, 7 (.06)</p> <p>Antibiotic Use:  With any ED diagnosis: 34, 31, 36; 35, 36 (.10)  With an ED diagnosis of pneumonia: 66, 66, 78; 78, 78(.03)  With no ED diagnosis of pneumonia: 27, 25, 27; 26, 28 (.68)  With an inappropriate ED diagnosis: 22, 20, 21; 22, 26 (.45)</p> <p>Mean Waiting Times to See a Physician:  Visits for respiratory symptoms: -, -, 39; 45, 56 (&lt;.001)  Visits not for respiratory symptoms: -, -, 47; 49, 58 (&lt;.001)  Difference, Respiratory symptom vs no respiratory symptom: -, -, 8; 4, 2 (.03)</p> <p>[Pre-Reporting %; Public Reporting % (Adjusted P value for difference)]</p> <p>Diagnosis:  Pneumonia: 10; 11 (.06)  Bronchitis: 26; 25 (.17)  CHF: 9; 8 (.40)</p> <p>Antibiotic Use:  With any ED diagnosis: 34; 35 (.45)  With an ED diagnosis of pneumonia: 70; 78 (.86)  With no ED diagnosis of pneumonia: 26; 27 (.79)  With an inappropriate ED diagnosis: 21; 24 (.80)</p> <p>Mean Waiting Times to See a Physician:  Visits for respiratory symptoms: 39; 50 (.06)  Visits not for respiratory symptoms: 47; 53 (.002)  Difference, respiratory vs no respiratory symptom: 8; 3 (.06)</p>	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
11685	Ghali, 1997 (Fair)	None	None	<p>Massachusetts CABG Cases, 1990-1994: Trends in Observed, Predicted, and Adjusted Mortality [Observed Mortality, % (95% CI); Predicted Mortality, % (95% CI); SMR (95% CI); Adjusted Mortality, % (95% CI)]</p> <p>1990 (baseline; n=5395): 4.7 (4.2-5.3); 4.7 (4.2-5.3); 1.00 (.78-1.2); 5.3 (4.1-6.4)</p> <p>1992 (n=5818): 3.5 (3.0-3.9); 5.4 (4.8-6.0); .65 (.50-.82); .65 (.50-.82); 3.4 (2.6-4.3)</p> <p>1994 (n=5915): 3.3 (2.8-3.8); 5.7(5.1-6.3); .58 (.45-.73); 3.1 (2.4-3.9)</p> <p>----</p> <p>CABG In-Hospital Mortality trends over time for Massachusetts, New York, and Northern New England: [Years Studied; Observed Mortality Reduction, % (Baseline; Final year); SMR</p> <p>Massachusetts: 1990-1994; 4.7; 3.3; .58</p> <p>New York: 1989-1992; 3.5;2.8; .59</p> <p>Northern New England: 1987-1993; 4.5; 3.6; .76</p> <p>----</p> <p>Unadjusted Medicare 30-Day CABG Mortality Rates, by %: [United States; Massachusetts; New York; Northern New England]</p> <p>1986; 6.0; 4.5; 4.2; 5.0</p> <p>1990: 3.5; 3.6; 2.7; 3.1</p> <p>1992: 4.3; 4.0; 3.3; 3.5</p>	None	None
6742	Guru 2006 (Fair)	Motivation for better outcomes	None	<p>Change in Risk-Adjusted 30 Day Mortality: [%; (95% CI)]</p> <p>After Confidential Reporting: -29% (21-39)</p> <p>After Public Reporting: +2%, (-10-14)</p>	None	None



Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
5135	Hannan 1994 (Good)	Better outcomes	Patients can use data to determine quality of surgeons and hospitals that perform CABG operations	<p>For Hospitals:</p> <p>Actual, Expected, and Risk-Adjusted Mortality in 1989-1992: Based on Hospitals' 1989 Risk-Adjusted Outlier Status: [Actual; Expected; Risk-Adjusted (95% CI)]</p> <p>1989:  Low Outliers: 2.54; 3.21; 2.46 (1.82-3.25)  Non Outliers: 3.32; 2.52; 4.09 (3.64-4.57)  High Outliers: 7.02; 2.43; 8.97 (7.06-11.25)</p> <p>1990:  Low Outliers: 2.74; 3.46; 2.46 (1.9-3.14)  Non Outliers: 3.21; 2.90; 3.43 (3.08-3.82)  High Outliers: 3.31; 2.60; 3.95 (2.77-5.47)</p> <p>1991:  Low Outliers: 3.00; 3.81; 2.44 (1.91-3.07)  Non Outliers: 2.99; 3.06; 3.03 (2.71-3.37)  High Outliers: 3.99; 2.78; 4.45 (3.35-5.81)</p> <p>1992:  Low Outliers: 2.89; 4.08; 2.20 (1.73-2.76)  Non Outliers: 2.80; 3.52; 2.47 (2.21-2.75)  High Outliers: 2.71; 3.01; 2.80 (1.99-3.83)</p> <p>----</p> <p>CABG Volume in 1989-1992: Based on Hospitals' RAMR Terciles in 1989: [1989 Volume #(%); 1990 Volume #(%); 1991 Volume #(%); 1992 Volume #(%)]</p> <p>Lowest Tercile: 2,617(21.3); 3,180(22.8); 3,446(23.2); 3,411(21.7)  Middle Tercile: 5,463(44.5); 5,927(42.5); 6,465(43.3); 7,046(44.8)  Highest Tercile: 4,189(34.1); 4,839(34.7); 5,013 (33.6); 5,276(33.5)</p> <p>CABG Volume in 1989-1992: Based on Hospitals' RAMR 1989 Outlier Status: [1989 Volume #(%); 1990 Volume #(%); 1991 Volume #(%); 1992 Volume #(%)]</p> <p>Low Outliers: 1,927(15.7); 2,332(16.7); 2,437(16.3); 2,559(16.3)  Non Outliers: 9,274(75.6); 10,525(75.5); 11,152(74.6); 11,736 (74.6)  High Outliers: 1,068(8.7); 1,089(7.8); 1,355(9.1); 1,438(9.1)</p>	None	None
5222	Hannan 1994b (Good)	none	Hospital for cardiac surgery	<p>Volume, Actual, Expected and Risk-Adjusted Mortality rates for CABG Surgery in NY, 1989-1992: [1989; 1990; 1991; 1992 Total]</p> <p>Volume: 12269; 13946; 14944; 16028; 57,187  Actual Mortality Rate, %: 3.52; 3.14; 2.08; 2.78; 3.11  Expected Mortality Rate, %: 2.62; 2.97; 3.16; 3.54; NA  Risk-Adjusted Morality Rate, %: 4.17; 3.28; 3.03; 2.45; NA</p>	None	None

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2999	Hibbard 2003 (Fair)	Patient/families	Future hospital care, mainly focused on obstetric and cardiac care	Public reporting vs. private reporting vs. no report Obstetric QI activities of worse than expected hospitals (mean estimated from graph, 0 to 7): 5.4 vs. 2.5 vs. 2; p<0.01 Cardiac QI activities of worse than expected hospitals (mean estimated from graph, 0 to 7): 3.3 vs. 2.2 vs. 1.5; not significant	None	Respondent's belief that public reporting will enhance or detract from hospitals' image (mean estimated from graph, 1=very likely to detract; 5=very likely to enhance) Worse than expected vs. as expected vs. better than expected Public reporting hospitals: 3 vs. 3.9 vs. 5; p<0.05 Private reporting hospitals: 3.8 vs. 3.5 vs. 3.6; not significant No reporting hospitals: 3.5 vs. 3.6 vs. 3.6; not significant
2191	Hibbard 2005 (Fair)	None	None	Public reporting vs. private reporting vs. no report Percent with statistically significant improvements in obstetric performance (estimated from graph): 34% vs. 22% vs. 12% Percent with statistically significant declines in obstetric performance (estimated from graph): 5% vs. 14% vs. 12% Of hospitals with worse than expected baseline scores, percent with improved performance (estimated from graph): 87% vs. 33% vs. 42%; p=0.04	None	None
11689	Hollenbeak 2008 (Good)	None	Hospital for 6 acute care conditions	Intensive public reporting (Pennsylvania) vs Limited public reporting (Non-Pennsylvania), 2000-2003: Odds ratios across all 6 conditions in Pennsylvania were lower than Non-Pennsylvania and statistically significant: OR range from .59 (95% CI: .46-.76) for hemorrhagic stroke to .70 (95% CI: .67-.94) for sepsis. ---- Limited Public reporting (Pennsylvania) vs Limited public reporting (Non-Pennsylvania), 1997-1999: Odds ratios for all 6 conditions in Pennsylvania were lower than Non-Pennsylvania; 1 (Ischemic stroke) not statistically significant: OR range from .72 (95% CI: .56-.93) for hemorrhagic stroke to .90 (95% CI: .78-1.03) for Ischemic stroke) ---- Intensive Public Reporting (Pennsylvania) vs Intensive Public Reporting (CO, CA, TX), three outcomes, 2000-2003:  Odds Ratios for: AMI higher in Pennsylvania CHF: lower in Pennsylvania Pneumonia: slightly lower in Pennsylvania  None were statistically significant ---- Limited Public Reporting (Pennsylvania) vs. Limited Public Reporting (CO, TX), three outcomes, 1997-1999:  Odds Ratios for: AMI Higher in Pennsylvania; not statistically significant CHF: Lower in Pennsylvania; not statistically significant Pneumonia: ~.5 in Pennsylvania; statistically significant	None	None
1761	Howard 2006 (Fair)	Patients and payers	Transplant hospitals.	None	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
1898	Jha 2006 (Good)	Patients and Surgeons	hospital and/or surgeon for CABG, a high risk surgery	<p>Top performing hospitals and surgeons at baseline continue to perform better in subsequent years.</p> <p>Hospital RAMR at 1996, 2002 and (all years summary): Top Decile, 1.82, 1.55 (1.59); Top quartile, 1.95, 2.03 (1.96); Bottom Quartile, 2.67, 2.13 (2.50); and Bottom decile, 2.89, 2.20 (2.78)</p> <p>Pearson correlation coefficients 0.10 for 1993 with 1996 reports, p=.60; 0.12 for 1994 with 1997 reports, p=.53; 0.37 for 1995 with 1998 reports, p=.04; 0.38 for 1996 with 1999 reports, p=.04; 0.30 for 1997 with 2000 reports, p=.10; and 0.36 for the 1998 and 2002 reports, p=.04</p>	See Individual Providers	See Individual Providers
4564	Longo 1997 (Fair)	Patients families and payers	Hospitals for obstetrical care. Consequences not necessarily dire, but could be.	<p>1994 Observed - Expected Obstetrical Outcomes, Difference O-E, P-value</p> <p>Ultrasound rates overall: 77.5-79.6, -.21, .04 Hospitals with average rates: 60.0-57.2,+2.8, .58 Hospitals with high rates: 89.0-94.0, -5.0, .03</p> <p>VBAC rates, Hospitals with low rates: 21.6-14.4, +7.2, .01 Hospitals with average rates: 28.1-27.7, +.04, .76 Hospitals with high rates: 40.9-45.9, -5.0, .07 Total: 30.3-29.8, +0.5, .59</p> <p>Cesarean rates, Hospitals with low rates: 13.1-13.2, -0.1, .84 Hospitals with average rates: 21.5-21.8, -0.3, .11 Hospitals with high rates: 26.7-32.7, -6.0, .01 Total: 21.3-22.0, -0.7, .01</p>	None	<p>Number (%) of Facilities that did not previously have services, but instituted services after guide published:</p> <p>Car seat: 18/42 (43%) Follow-up services: 17/34(50) Formal transfer agreement: 13/33(39) Nurse educator for breast-feeding:6/18(33) Tubal ligation: 2/15(13) Total of above services: 56/142(39)</p> <p>Number (%) of Facilities with policies changed, planned to change, or with change under discussion, single facility in community vs. multiple facilities in community:</p> <p>Cesarean delivery: 5/36(14) vs. 14/41 (34) High-risk infant transfer: 5/35(14) vs. 6/40(15) Ultrasound rate: 1/33(3) vs. 3/37 (8) VBAC rate: 7/36(19) vs. 15/41 (37) VLBW rate: 2/33 (6) vs. 5/39(13) Newborn death rate: 2/34 (6) vs. 3/37 (8) Appropriateness of charges: 12/41 (29) vs. 12/41 (29) Satisfaction with: Billing: 6/34(18) vs. 12/40(30) Nurses: 8/37 (22) vs. 13/40 (33) Other staff: 7/35 (20) vs. 11/39(28) Physical facility: 6/35(17) vs. 10/40 (25) Physicians: 5/35(14) vs. 8/39(21)</p>
4617	Mennemeyer 1997 (Fair)	NA	Hospital	None	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
2222	Moscucci 2005 (Fair)	Patient/families	None	<p>New York vs. Michigan in hospital outcomes</p> <p>Death: 0.83% vs. 1.54%; p&lt;0.0001</p> <p>- Cardiogenic shock: 37.9% vs. 31.3%; not significant</p> <p>- Acute MI, no cardiogenic shock: 2.97% vs. 2.28%; not significant</p> <p>- Any acute MI: 4.23% vs. 6.72%; p&lt;0.0001</p> <p>- Cardiac arrest: 32.8% vs. 20.1%; p=0.01</p> <p>- Unadjusted OR for overall death: 0.54 (95% CI 0.45 to 0.63); p&lt;0.0001</p> <p>- Adjusted OR for overall death, adjusted for age and gender: 0.49 (95% CI 0.42 to 0.59); p&lt;0.0001</p> <p>- Adjusted OR for overall death, adjusted for age, gender, and historical and other risk variables: 1.07 (95% CI 0.86 to 1.33); not significant</p> <p>- Adjusted OR for overall death, adjusted for age, gender, historical and other risk variables, and hospital volume (&lt;400 procedures/y): 1.05 (95% CI 0.84 to 1.31); not significant</p> <p>MI: 1.95% vs. 2.04%; not significant</p> <p>Stroke/transient ischemic attack: 0.29% vs. 0.51%; p=0.0001</p> <p>Emergency CABG: 0.38% vs. 0.85%; p&lt;0.0001</p> <p>Major adverse events: 3.165 vs. 4.45%; p&lt;0.0001</p> <p>Revascularization: 0.58% vs. 0.70%; not significant</p> <p>Vascular complications: 0.54% vs. 1.99%; p&lt;0.0001</p>	None	None
4377	Mukamel, 1998 (Fair)	None	None	None	<p>Published RAMR changed prices charged by surgeons by (Regression coefficient)</p> <p>New York City: -0.01</p> <p>Upstate: -1.3</p> <p>-Albany County: -0.1</p> <p>-Erie County: -1.7</p> <p>(none statistically significant; Erie county on the cusp: p=.052)</p>	<p>Hospitals</p> <p>-Increase in RAMR of 1 percentage point = decrease in growth rate in market share of 1.8 percentage points</p> <p>-Median change in market share (all hospitals)=1.9 percentage points; median RAMR=4.2</p> <p>Individual surgeons</p> <p>-Increase in RAMR of 1 percentage point =decrease in growth rate of 7 percentage points</p> <p>-Median surgeon with 60 surgeries=loss of 4.2 patients due to a 1 percentage point increase in RAMR</p> <p>-Limiting analysis to physicians &gt;10 cases in 1991, increase in RAMR of 1 percentage point= difference in mortality rates increased from 7 to 10 percentage points</p> <p>----</p> <p>By region:</p> <p>Published RAMR changed growth by</p> <p>New York City: -6.3 percentage points</p> <p>Upstate: -8.8 percentage points</p> <p>-Albany County: +8.0 percentage points</p> <p>-Erie County: -8.2 percentage points</p> <p>-Monroe County: -14.5 percentage point</p>

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
11684	Omoigui 1996 (Poor)	None	None	None	<p>n=482 from NY, 6046 from OH, 1923 from Other States (OS) and 991 from Other Countries (OC).</p> <p>Overall Observed and Expected Death Rates Using Cleveland Clinic and New York Models</p> <p>Cohort</p> <p>a. Obs death%</p> <p>b. Exp Death% CCF Model</p> <p>c. Exp Death% With NY Model</p> <p>New York</p> <p>a. 5.1</p> <p>b. 3.7</p> <p>c. 5.37</p> <p>Ohio</p> <p>a. 2.84</p> <p>b. 2.9</p> <p>c. 3.91</p> <p>Other States</p> <p>a. 3.2</p> <p>b. 3.14</p> <p>c. 4.29</p> <p>Other Countries</p> <p>a. 1.4</p> <p>b. 1.7</p> <p>c. 2.12</p> <p>CCF indicates Cleveland Clinic Foundation; NY, New York.</p> <p>Patients from New York had a higher expected mortality than all other referral cohorts. On average, they were also at higher risk than the New York State-wide mix.</p>	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
11684 (cont)					<p>Table 7. Comparison of Major Morbidity and Mortality</p> <p>Risk Factor</p> <p>a. OH b. OS c. NY d. OC e. P for OH vs NY f. P for OS vs NY</p> <p>Renal failure, %</p> <p>a. 1.6 b. 1.4 c. 3.7 d. 1.3 e. .001 f. .001</p> <p>Respiratory failure, %</p> <p>a. 9.4 b. 8.8 c. 11.6 d. 4.7 e. .110 f. .062</p> <p>Heart failure, %</p> <p>a. 4.3 b. 5.0 c. 7.3 d. 1.3 e. .003 f. .050</p> <p>In-hospital death, %</p> <p>a. 2.9 b. 3.1 c. 5.2 d. 1.4 e. .004 f. .028</p> <p>Relative to patients from Ohio, patients from New York had an odds ratio for death of 1.7 (95% confidence interval [CI], 1.1 to 2.7) beyond the risk of being from out of state.</p>	
11686	Peterson 1998 (Good)	None	None	<p>Whether bypass surgery outcomes were improving more rapidly in NY than in the rest of the nation. While, mortality rates fell significantly for both NY and non-NY groups from 1987 to 1992, the NY rates fell significantly faster than the rest of the nation. (p=0.005). That is, 30-day mortality rate following bypass declined in NY by 33% and for the rest of the nation by 19%. In a post-only analysis from 1989-1992, the decline was 22% in NY and 9% in non-NY (p&lt;0.001)</p>	<p>2. Use of bypass surgery following a MI had declined in NY's elderly since the initiation of report cards</p> <p>NY MI patients were less likely to receive bypass surgery than non-NY but overall, %age of NY MI patients receiving surgery rose significantly from 3.4% in 1987 to 8.4% in 1992. There no evidence of harms.</p>	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
2648	Romano 2004 (Good)	<p>Race: Black, White, Hispanic, Other</p> <p>Age: &lt;55, 55-64, 65-74, &gt;75</p> <p>Insurance status: Medicare, Medicaid, private, HMO, uninsured, other</p> <p>Catchment Area: Air distance between geographic centroid of patient's Zip code and the hospital. Then hospital's Catchment area was the set of zip codes that contributed 60% of that facility's discharges, plus additional zip codes for which that hospital was the majority provider of inpatient, acute care before publication of the first report</p>	Hospitals for different surgeries	None	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
11687	Rosenthal 1997 (Good)	None	None	<p>1991 vs. 1992 vs Jan-June 1993 vs. July-Dec 1993  Observed mortality rates (%)  All: 7.3 vs. 6.9 vs. 6.9 vs. 6.4; p&lt;0.001  Acute myocardial infarction: 11.1 vs. 10.1 vs., 11.4 vs. 10.4; NS  Coronary heart failure: 7.0 vs. 6.8 vs. 5.9 vs. 5.7; p&lt;0.001  Pneumonia: 10.5 vs. 10.6 vs. 10.6 vs. 10.2; NS  Stroke: 10.5 vs. 10.2 vs. 10.7 vs. 10.2; NS  Obstructive airway disease: 2.8 vs. 2.3 vs. 2.7 vs. 2.5; NS  Gastrointestinal hemorrhage: 5.2 vs. 4.2 vs. 4.2 vs. 4.2; NS  Lower bowel resection: 5.9 vs. 4.5 vs. 4.8 vs. 3.7; p&lt;0.05  CABG: 2.5 vs. 3.3 vs. 2.9 vs. 2.6; NS  Risk-adjusted mortality rates (%)  All: 7.3 vs. 6.8 vs. 6.8 vs. 6.5; weighted regression analysis: -0.30 (95% CI -0.58 to 0.06); p=0.06  Acute myocardial infarction: 11.1 vs. 10.2 vs. 10.8 vs. 11.0; weighted regression analysis: 0.00 (95% CI -0.90 to 0.90); p=0.98  Coronary heart failure: 7.1 vs. 6.6 vs. 6.0 vs. 5.6; weighted regression analysis: -0.50 (95% CI -0.61 to -0.39); p=0.002  Pneumonia: 11.1 vs. 10.4 vs. 10.2 vs. 9.9; weighted regression analysis: -0.38 (95% CI -0.66 to -0.09); p=0.03  Stroke: 10.9 vs. 10.0 vs. 10.4 vs. 9.8; weighted regression analysis: -0.36 (95% CI -1.12 to 0.39); p=0.17  Obstructive airway disease: 3.0 vs. 2.0 vs. 2.6 vs. 2.6; weighted regression analysis: -0.08 (95% CI -0.90 to 0.75); p=0.72  Gastrointestinal hemorrhage: 5.2 vs. 4.2 vs. 4.3 vs. 4.1; weighted regression analysis: -0.35 (95% CI -0.93 to 0.23); p=0.12  Lower bowel resection: 5.3 vs. 4.6 vs. 5.4 vs. 4.0; weighted regression analysis: -0.31 (95% CI -1.38 to 0.77); p=0.34  CABG: 3.0 vs. 3.2 vs. 2.5 vs. 2.4; weighted regression analysis: -0.21 (95% CI -0.90 to 0.48); p=0.18  Risk of in-hospital death 1992-1993 relative to 1991: OR (95% CI)  Acute myocardial infarction: 0.94 (0.80 to 1.10); NS  Coronary heart failure: 0.81 (0.72 to 0.91); p&lt;0.001  Pneumonia: 0.86 (0.76 to 0.98); p&lt;0.05  Stroke: 0.84 (0.76 to 0.98); p&lt;0.05  Obstructive airway disease: 0.76 (0.60 to 0.97); p&lt;0.05  Gastrointestinal hemorrhage: 0.70 (0.54 to 0.92); p&lt;0.01  Lower bowel resection: 0.82 (0.58 to 1.17); NS  CABG: 0.89 (0.64 to 1.24); NS</p>	None	None



Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
1666	Shabino 2006 (Poor)	Patients and Families	Health care selection	<p>December 2004 vs September 2006, Wisconsin state averages</p> <p>Acute MI outcomes:  Aspirin on arrival: 96% vs 97%  Aspirin at discharge: 97% vs 97%  Beta blocker at arrival: 91% vs. 94%  Beta blocker at discharge: 93% vs. 96%  ACEI/ARB Left Ventricular Systolic Dysfunction: 80% vs. 85%  Smoking Counseling: 86% vs. 95%</p> <p>CHF:  Left ventricular function assessment: 86% vs. 91%  ACEI/ARB Left Ventricular Systolic Dysfunction: 79% vs. 84%  Smoking Counseling: 64% vs. 86%  Discharge instructions: 53% vs. 64%</p> <p>Community acquired pneumonia:  Oxygen assessment: 99% vs. 100%  Pneumonia vaccine: 47% vs. 73%  Smoking counseling: 61% vs. 83%  Antibiotic within 4 hours: 2006 only: 84%</p>	None	None
491	Tu 2009 (Fair)	None	None	<p>AMI Composite Indicators: Early Feedback Group: 8.2% Change between baseline and follow-up; 95% CI, 5.8%-10.7%  Delayed Feedback Group: 7.1% Change between baseline and follow-up; 95% CI, 4.3%-10% Difference between groups:  1.5% change; 95% CI, -2.2%-5.1%; p=.43</p> <p>CHF Composite Indicators: Early Feedback Group: -.2 change between baseline and follow-up; 95% CI, -5.0%-4.6%  Delayed Feedback Group: 1.8% change between baseline and follow-up; 95% CI,-2.7-6.1, Difference between groups: .6% change; 95% CI, -4.5%-5.7%; p=.81</p> <p>----  (Exploratory Sub-group analysis)  Absolute Difference for Early vs. Delayed Feedback in mean change for Hospital-Specific Mortality Rates After Publication of Report Cards: [% difference, (95% CI); P-value]</p> <p>AMI 30 Day: -2.5 (-4.9 to -.1); .045  AMI 1-year: -3.1 (-6.4 to .2); .06  STEMI 30 Day: -3.1 (-6.0 to -.2); .04  STEMI 1-year: -3.2(-7.3 to 1.0); .13  CHF 30 Day: -1.1 (-3.2 to .9); .26  CHF 1-year: -2.8(-6.0 to .5); .10  CHF and LV dysfunction 30 day: -1.2(-4.1 to 1.8); .44  CHF and LV dysfunction 1-year: -6.8(-11.6 to -2.0); .007</p>	None	None
5572	Vladeck 1988 (Poor)	None	Hospital	None	None	None
10858	Wang 2011 (Good)	None	None	None	None	None

Refid	Author, Year (QA)	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/Choice	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)
8037	Werner 2010 (Good)	None	None	<p>2004 vs. 2006: Mean performance score (%)</p> <p>Acute myocardial infarction</p> <p>Aspirin at admission: 93.9 vs. 95.7; p&lt;0:001</p> <p>Aspirin at discharge: 91.5 vs. 95.0 p&lt;0:001</p> <p>ACE inhibitor for left ventricular dysfunction: 79.6 vs. 87.0; p&lt;0:001</p> <p>Beta-blocker at admission: 88.8 vs. 92.5; p&lt;0:001</p> <p>Beta-blocker at discharge: 90.2 vs. 95.0; p&lt;0:001</p> <p>Composite score: 90.5 vs. 93.8; p&lt;0:001</p> <p>Heart failure</p> <p>Assessment of left ventricular function: 82.6 vs. 88.8; p&lt;0:001</p> <p>ACE inhibitor for left ventricular dysfunction: 75.8 vs. 85.3; p&lt;0:001</p> <p>Composite score: 79.5 vs. 87.1; p&lt;0:001</p> <p>Pneumonia</p> <p>Oxygenation assessment: 98.2 vs. 99.5; p&lt;0:001</p> <p>Pneumococcal vaccination: 46.8 vs. 73.3; p&lt;0:001</p> <p>Timing of initial antibiotic therapy: 73.2 vs. 80.5; p&lt;0:001</p> <p>Composite score: 77.7 vs. 86.5; p&lt;0:001</p> <p>----</p> <p>Mortality change (%) vs. length of stay (days) vs. readmission rates (%)</p> <p>Predicated change in hospital outcomes in repose to a 10-point improvement in performance</p> <p>Acute myocardial infarction: -0.6; p&lt;0.05 vs. -0.19; p&lt;0.0001 vs. -0.5; p&lt;0.001</p> <p>Heart failure: 0.04 vs. 0.01 vs. -0.2; p&lt;0.001</p> <p>Pneumonia: -0.2 vs. 0.3; p&lt;0.001 vs. -0.1</p> <p>Low vs. low-middle vs. middle-high vs. high</p> <p>Change in performance from 2004 to 2006 (% estimated from graph, p values not reported)</p> <p>Acute myocardial infarction: 8 vs. 6 vs. 2 vs. -1</p> <p>Heart failure: 15 vs. 7 vs. 6 vs. 5.5</p> <p>Pneumonia: 15 vs. 11 vs. 7 vs. 3.5</p> <p>----</p> <p>Estimated change in hospital outcomes for a 10-point improvement in performance</p> <p>Acute myocardial infarction</p> <p>Mortality: -0.9; p&lt;0.01 vs. -1.2; p&lt;0.000 vs. -0.7; p&lt;0.05 vs., -0.1</p> <p>Length of stay: -0.18; p&lt;0.001 vs. -0.26; p&lt;0.001 vs. -0.29; p&lt;0.001 vs. -0.03</p> <p>Readmission: -0.5 vs. -0.7 vs. -1.9; p&lt;0.001 vs. 1.0</p> <p>Heart failure</p> <p>Mortality: 0.0 vs. 0.0 vs. -0.2; p&lt;0.05 vs. 0.0</p> <p>Length of stay: 0.01 vs. -0.01 vs. -0.03 vs. 0.01</p> <p>Readmission: -0.1 vs. -0.5; p&lt;0.001 vs. -0.5; p&lt;0.001 vs. 0.0</p> <p>Pneumonia</p> <p>Mortality: -0.2; p&lt;0.05 vs. -0.4; p&lt;0.01 vs. -0.3; p&lt;0.05 vs. 0.2</p> <p>Length of stay: 0.14; p&lt;0.001 vs. 0.15; p&lt;0.001 vs. 0.10; p&lt;0.01 vs. 0.11; p&lt;0.05</p> <p>Readmission: 0.0 vs. -0.2 vs. -0.5; p&lt;0.05 vs. -0.2</p>	None	None

**Section C: Contains columns 14 through 18 of all hospital quantitative studies (H32: H41)**

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
1182	Apolito 2008 (Good)	None	None	None	<p>For management (undergoing PCI and/or CABG, having a coronary angiography), NY patients were approximately HALF AS LIKELY as non-NYers to undergo treatment, except for CABG, where it was much closer to non-NYers. Everything was statistically significant under the .01 level here except for CABG, both adjusted and unadjusted.</p> <p>Re: in-hospital mortality, before adjustment, NY patients were 1.3 times more likely to die, but there was no significance. However, with propensity score adjusted models, NY patients were 1.5 times more likely to die in-hospital than non-NYers and this was stat. significant (p=.04)</p> <p>In addition, among patients who were not revascularized (no PCI or CABG), NYers were 2.12 times more likely to die in hospital (p=.01), but among those undergoing PCI/CABG, there was not a statistically significant relationship.</p> <p>Author's conclusion: Case selection bias is evident in NY (but uses evidence in discussion that was not presented earlier on).</p>	Partially supported by grants from the National Heart, Lung, and blood Institute, Bethesda, MD
3184	Baker 2002 (Fair)	None	None	None	<p>Author's conclusion: We found that risk-adjusted 30-day mortality did not improve for three of six conditions and actually worsened for stroke. Although we cannot exclude a beneficial effect of the program because we observed favorable trends for COPD and CHF, it would be difficult to ascribe the observed trends for these conditions to the effects of CHQC.</p>	AHRQ
2949	Baker 2003 (Fair)	<p>Mortality: Hospital outlier status (best, above average, below average, worst) was not significantly related to changes in market share for the 6 medical conditions (P value NR).</p> <p>During periods in which hospitals had higher than expected mortality with P&lt;0.01 significance, the adjusted difference in market share was - 0.22 absolute percentage points (95% CI: -0.73-0.29; P=0.40) lower than during periods in which the hospitals were not outliers.</p> <p>During the periods in which hospitals had higher than expected mortality with P&lt;.05 significance, the adjusted difference in market share was 0.21 absolute percentage points higher than for periods in which hospitals were not identified as outliers (95% CI: -0.14-0.56; P=0.24).</p>	None	None	<p>Author's summary: No evidence that hospitals identified as high-mortality outliers lost market share or that hospitals with better than expected mortality gained market share.</p>	AHRQ funded report

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
1512	Bridgewater 2007 (Good)	None	None	None	In time period after public reporting, observed mortality decreased while expected mortality increased. Despite this, observed to expected ratio decreased. Stratifying patients using the EuroSCORE to identify their level of risk shows that over time, low risk patients undergoing surgery decreased, high risk increased, and Very high risk increased slightly, but this was not statistically significant.	5 authors are members of the steering group of the North West Quality Improvement Programme in Cardiac Interventions. 1 author is president of the British Cardiovascular Society. 1 author is president of the Society for Cardiothoracic Surgery of GB and Ireland and a member of the Healthcare Commission
1735	Carey 2006 (Fair)	CABG volume decreased after Public Reporting, PCI rates increased after Public reporting - Not really sure if this is part of the analysis or just a way the authors are performing a validity check	None	None	Mortality decreased overall between the pre-mandatory public reporting and the post public reporting. PCI volume increased and CABG volume decreased - could be a better procedure, but not sure	None
2443	Caron 2004 (Fair)	None	None	None	Author's summary: Pearson's correlations indicate that improvements in clinical outcomes were correlated and sustained over time. In testing this approach, we predicted 28 correlations between the 7 outcome variables. 23 were in the predicted direction. These results suggest that organizations are attempting to support CQI and not focus efforts in one clinical domain.	NR
3329	Clough 2002 (Fair)	None	None	None	Author's conclusion: The data here do not support the claim of a unique decline in mortality in Cleveland during the first 4 years of public data releases by CHQC.	NR
8164	Cutler 2004 (Fair)	None	None	None	Public reporting affected the volume of CABG cases and future quality at hospitals	NIA
11683	Dranove 2003 (Good)	None	None	Report Cards led to substantial selection by providers as the severity of patients receiving CABG declined. Second, hospitals in PA and NY experienced relative declines in the within-hospitals heterogeneity, i.e. teaching schools picked up most of the severe cases. Third, report cards led to higher levels of Medicare hospitals expenditures and greater rates of adverse health outcomes.		

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
941	Dranove 2008 (Good)	<p>Demand Model Estimates: Eq1 Naive Model vs. Eq2 Correct Model vs. Eq3 Medicaid interactions vs. Eq4 Race interactions vs. Eq5 Asymmetric Model</p> <p>Report card news: Eq2 – 0.043 (P = 0.004) vs. Eq3 0.008 (P = 0.338) vs. Eq4 –0.062 (P = 0.062) Report card score: Eq1 0.021 (P=0.168) – NewsxMedicaid: Eq3 0.248 (P = 0.000) NewsxMedicare: Eq3 0.012 (P = 0.330) Newsxwhite: Eq4 0.113 (P = 0.002) Newsxblack: Eq4 –0.002 (P = 0.973) Positive news: Eq5 –0.011 (P = 0.756) Negative news: Eq5 0.072 (P = 0.002) Time: Eq1 –0.105 (P = 0.000), Eq2 –0.105 (P = 0.000), Eq3 –0.105 (P = 0.000), Eq4 –0.105 (P = 0.000), Eq5 –0.104 (P = 0.000) Fixed effect: Eq2 – 0.065 (P = 0.015), Eq3 0.075 (P = 0.009), Eq4 0.060 (P = 0.060), Eq5 0.048 (P = 0.090) Observations: Eq 1 453016, Eq2 453016, Eq3 453016, Eq4 453016, Eq5 453016 Log likelihood: Eq1 –51705, Eq2 –51701, Eq3 –51691, Eq4 –51696, Eq5 –51700</p>	None	None	<p>Author's summary: When hospital report cards provide information that differs from patients' prior beliefs, patients respond to this information by moving to higher-quality hospitals. We also showed that this effect is primarily due to shifting away from hospitals with negative news, rather than shifting towards hospitals with positive news.</p>	NR
6505	Elliott 2010 (Good)	None	None	None	<p>Public reporting increased the hospitals scores on nursing communication, responsiveness of staff, pain management, communication about medications, cleanliness and quietness of hospital, discharge information and recommendation, but not on doctor communication using a survey one year after public reporting</p>	<p>CMS through a contract with Health Services Advisory Group and RAND (contract no. HHSM-500-2008-A29THC)</p>
7869	Evans 1997 (Fair)	None	None	None		Institute for Industrial Competitiveness

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
4943	Foreman 1995 (Poor)	<p>Number of Hospital Patients by Region and Quality</p> <p>a. High Quality Hospital Patient Growth % b. Low Quality Hospital Patient Growth % c. Difference in Mean Growth %^</p> <p>Region 1 a. -10.5 b. -16.5 c. +6.0 Region 2 a. 7.6 b. -8.9 c. +16.5 Region 3 a. +9.2 b. 0.0 c. +9.2 Region 4 a. -3.8 b. - c. - Region 5 a. -1.8 b. -3.1 c. +1.3 Region 6 a. - b. -3.5 c. - Region 7 a. 10.7 b. -5.2 c. +15.9 Region 8 a. -4.7 b. 1.1 c. -5.8 Region 9 a. -3.7 b. -6.9 c. +3.2</p> <p>^positive numbers indicate high quality group had better patient growth</p> <p>None of the changes were statistically significant (No P values or CIs reported).</p>	None	None	The number of patient admissions for high quality hospitals grew in all but one region after the public release of quality data, but there was no statistical significance with any of the changes.	NR
6612	Friedberg 2009 (Good)	None	None	None	Essentially, no evidence that public reporting of antibiotic timing in pneumonia has changed/increased over-diagnosis of pneumonia, inappropriate use of antibiotics, or over-prioritization of patients with respiratory symptoms as witnessed by waiting times. Some trends were statistically significant before adjusting for potential confounders, but after adjustment the only item that was statistically significant was mean waiting times for patients without respiratory symptoms.	Primary Care Teaching and Education Fund from corresponding author's hospital; National Research Service Award from the Health Resources and Services administration; and Career Development Award from AHRQ. No COIs stated.

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
11685	Ghali, 1997 (Fair)	None	None	None		Massachusetts health Data Consortium; Walnut Medical Charitable Trust; Dr. Ghali supported by grant from Alberta Heritage Foundation for Medical Research
6742	Guru 2006 (Fair)	None	None	None	Risk-adjusted 30 day mortality rates in Ontario decreased significantly after confidential reports. After Public Reporting, mortality increased slightly, but was not significant.	Heart and Stroke Foundation of Ontario
5135	Hannan 1994 (Good)	None	None	None	In hospitals, RAMR decreased in all outlier status categories, along with a concomitant numerical volume increase in all categories.  For Surgeons, all tercile groups experienced reductions in their RAMR, with the highest RAMR in 1989 being reduced from 5.90 to 3.26 in 1992. Among outliers in the Surgeon category, only those who were the lowest outliers in 1989 (with an RAMR of .74) experienced a RAMR rise in 1992 (1.09). The largest reduction in RAMR was among the high outlying surgeons with 7.06% decrease between 1989-1990 and 1992.	Partial grant from the Agency for Health Care Policy and Research of the US Department of Health and Human Services
5222	Hannan 1994b (Good)	None	None	None	CABG surgery volume increased over the years, and overall, the expected mortality rate increased while the RAMR decreased from 4.17 in 1989 to 2.45 in 1992.	Agency for Health Care Policy and Research of the US Department of Health and Human Services
2999	Hibbard 2003 (Fair)	None	None	None	Making performance information public stimulates quality improvements in areas where performance is rated low.	Robert Wood Johnson Foundation
2191	Hibbard 2005 (Fair)	None	None	None		The Robert Wood Johnson Foundation's Changes in Health Care Funding and Organization Initiative
11689	Hollenbeak 2008 (Good)	None	None	None	Authors' conclusions: Public reporting is associated with better outcomes when measuring in-patient mortality as witnessed by Pennsylvania's better ORs compared to non-reporting or limited reporting states, in addition to the relative lack of statistical significance in differences between other states that also have public reporting.	COIs: Hollenbeak is a paid consultant to the PHC4. Gorto is officer and shareholder of APS Healthcare, and is a paid consultant for Bristol-Myers Squibb. Tabak is employee of Cardinal Health and own minor equity in the company. Jones was employee of PHC4, Milstein has no COI. Johannes is employee of Cardinal Health and owns equity in company totaling less than 1%.

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
1761	Howard 2006 (Fair)	<p>Incident Rate Ratios: (*p&lt;.10, **p&lt;.05)</p> <p>Performance: actual graft survival rate - expected graft survival rate (numbers &gt;1 indicate increased performance and increased patient demand; numbers &lt;1 indicate increased performance and decreased patient demand):</p> <p>All registrants: No Fixed Effects: All centers:3.66 [1.69, 7.96]** Fixed Effects: All centers:1.10 [.77, 1.57]; &gt;10 registrants: 1.07 [.73, 1.57]; &gt;20 registrants: 1.14 [.75, 1.73]</p> <p>College degree: No Fixed Effects: All centers:6.01 [1.95, 18.56]** Fixed Effects: All centers: 1.84 [.76, 4.45]; &gt;10 registrants: 1.98 [.74, 5.34]; &gt;20 registrants 3.39 [1.09, 10.53]**</p> <p>Age 18–40: No Fixed Effects: All centers: 4.81 [1.96, 11.77]** Fixed Effects: All centers: 2.07 [1.27, 3.35]**; &gt;10 registrants: 2.03 [1.21, 3.40]**; &gt;20 registrants: 2.35 [1.33, 4.13]**</p> <p>Private insurance: No Fixed Effects: All centers: 5.21 [2.11, 12.84]** Fixed Effects: All centers: 1.19 [.70, 2.03]; &gt;10 registrants: 1.09 [.61, 1.97]; &gt;20 registrants: 1.39 [.72, 2.67]</p> <p>Living donor No Fixed Effects: All centers: 2.90 [1.06, 7.93]** Fixed Effects: All centers: 1.34 [.83, 2.16]; &gt;10 registrants: 1.37 [.82, 2.28]; &gt;20 registrants: 1.13 [.65, 1.96]</p> <p>----</p> <p>Performance: actual graft survival rate(numbers &gt;1 indicate increased performance and increased patient demand; numbers &lt;1 indicate increased performance and decreased patient demand):</p> <p>All registrants: No Fixed Effects: All centers: 3.00 [1.50, 6.00]** Fixed Effects: All centers: 1.16 [.82, 1.63]; &gt;10 registrants: 1.04 [.72, 1.52]; &gt;20 registrants: 1.19 [.80, 1.77]</p> <p>College degree: No Fixed Effects: All centers: 4.04 [1.54, 10.58]** Fixed Effects: all centers: 1.50 [.64, 3.53]; &gt;10 registrants: 1.59 [.61, 4.16]; &gt;20 registrants: 2.98 [1.00, 8.84]**</p> <p>Age 18–40: No Fixed Effects: All centers: 3.83 [1.73, 8.49]** Fixed Effects: All centers 2.06 [1.30, 3.25]**; &gt;10 registrants 1.92 [1.18, 3.12]**; &gt;20 registrants 2.21 [1.30, 3.76]**</p> <p>Private insurance: No Fixed Effects: All centers: 4.39 [1.95, 9.85]** Fixed Effects: All centers: 1.23 [.74, 2.07]; &gt;10 registrants: 1.06 [.60, 1.88]; &gt;20 registrants: 1.45 [.77, 2.72]</p> <p>Living donor: No Fixed Effects: All centers: 3.09 [1.27, 7.52]** Fixed Effects: All centers: 1.47 [.93, 2.32]*; &gt;10 registrants: 1.42 [.87, 2.31]; &gt;20 registrants: 1.24 [.73, 2.10]</p>	None	None	<p>Author's summary: Some evidence that publicly reported outcome measures influence the choices of younger patients and patients with college degrees, but overall we are unable to detect an impact of report cards for kidney transplantation on demand.</p>	National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health



Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
1761	Howard 2006 (Fair) Cont.	<p>Performance: observed/expected graft failure (numbers &gt;1 indicate increased performance and DECREASED patient demand; numbers &lt;1 indicate increased performance and INCREASED patient demand):</p> <p>All registrants: No Fixed Effects: All centers: .89 [.82, .96]**; Fixed Effects: All centers: .99 [.96, 1.03]; &gt;10 registrants: 1.00 [.96, 1.04]; &gt;20 registrants 1.00 [.96, 1.04]</p> <p>College degree: No Fixed Effects: All centers: .84 [.75, .94]** Fixed Effects: All centers: .95 [.87, 1.04]; &gt;10 registrants: .96 [.87, 1.06]; &gt;20 registrants: .93 [.83, 1.05]</p> <p>Age 18–40: No Fixed Effects: All centers: .87 [.79, .96]** Fixed Effects: all centers: .94 [.89, .98]**; &gt;10 registrants: .94 [.89, .99]**; &gt;20 registrants: .93 [.87, .98]**</p> <p>Private insurance: No Fixed Effects: All centers: .85 [.78, .94]** Fixed Effects: All centers: .97 [.92, 1.03]; &gt;10 registrants: .99 [.93, 1.05]; &gt;20 registrants: .97 [.91, 1.04]</p> <p>Living donor: No Fixed Effects: All centers: .93 [.84, 1.03] Fixed Effects: All centers: .99 [.94, 1.04]; &gt;10 registrants: .98 [.93, 1.04]; &gt;20 registrants: 1.00 [.94, 1.06]</p>				
1898	Jha 2006 (Good)	<p>Hospital Market Share: no evidence that report cards affected subsequent market share</p> <p>Impact of Performance Reporting on Hospitals' Subsequent Surgical Market Share: All Years (1995, 1996, 1997, 1998, 2000, 2001 report releases): [Pre report Market share %; Post report Market share %; % point change]</p> <p>Top 10 Percent Hospitals: 10.9; 10.5; -.4 Top Quartile Hospitals: 28.1; 27.9; -.2 Bottom Quartile Hospitals: 21.8; 21.9; .1 Bottom 10 Percent Hospitals: 8.0; 7.6; -.4 Parameter estimate (P-value) for all years: -.1%(.13)</p>	None	None	Baseline performance is associated with future performance (i.e. top performing hospitals at baseline continue to be top performing hospitals in subsequent years). There were no trends regarding report cards and market shares at either the hospital or individual surgeon levels. Lower performing surgeons were more likely to quit practicing in NY than top performing, although some of this may not be associated with the release of performance data.	NR
4564	Longo 1997 (Fair)	None	None	None	Author's summary: It appears that although consumer reports were initially designed to assist patients in making better decisions about personal health care, they have been carefully evaluated by health care clinicians and delivery organizations.	NR

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
4617	Menemeyer 1997 (Fair)	Hospital discharges are used as a measure of patient and physician selection of hospitals. Several model specifications were tested and a partial fixed effects used that assumed the released information has an effect in its year of release selected DV=hospital discharges Standardized mortality rate: coefficient: -46.60 p<.05 Interpretation: a hospital with two actual deaths for each HCFA predicted death had within one year 46 fewer discharges, fewer than one less discharge per week. Lagged discharges: .60 p<.001: Interpretation: 40% of the effect is in the first year, the rest after. Media stories related to hospital quality had no effect in another model specification (data not shown).  A graphic analysis of the impact in a small number of cases of media reporting of a untoward event found that this resulted in an approximately 9% reduction in discharges.	None	None	Models find HCFA report has little impact on hospital selection: measured by discharges.  Based on this: Author's conclusion/opinion: HCFA was justified in eliminating the mortality report because consumers were not using it to choose hospitals. HCFA mortality data had small effects on hospital discharges. Press reports on the findings did not have an influence on discharges, but press reports of 'easily understood, bad outcomes' influenced hospital volume. At an average hospital, a newspaper account of an unusual hospital death was associated with a 9% reduction in hospital use.	Robert Wood Johnson Foundation. No COIs listed.
2222	Moscucci 2005 (Fair)	None	None	None	This data suggests that public reporting (in New York) decreased in-hospital mortality from PCI, however when adjustments are made these findings are washed out.	Blue Cross Blue Shield of Michigan
4377	Mukamel, 1998 (Fair)	None	None			Not reported
11684	Omoigui 1996 (Poor)	None	None	None	Patients referred from New York State for CABG since 1989 were at higher risk and experienced higher morbidity and mortality than other patients operated on at the Cleveland Clinic, beyond what was expected as a time-related function of increasingly adverse patient characteristics. Harm Confirmed.	Unclear
11686	Peterson 1998 (Good)	1. Out-of state procedure rate in 2 years pre-report cards ranged between 12.5% - 14.3%. After initiation, the rate declined to 11.3% in 1992. (p<0.001)	None	None	Since NY introduced provider profiling, bypass surgery outcomes have improved markedly without any evidence that access to care has declined.	AHRQ

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2648	Romano 2004 (Good)	<p>Significant mean differences in actual minus predicted monthly patient volume (95% CI) based on specific conditions</p> <p>California "better" outlier hospitals</p> <p>AMI patients Q3: 1.7 (0.2 to 3.1); p&lt;0.05</p> <p>AMI patients Q4: 2.8 (1.3 to 4.4); p&lt;0.01</p> <p>AMI-related patients Q1: -3.8 (-6.9 to -0.8); p&lt;0.05</p> <p>Dissectomy-related patients Q3: -1.1 (-2.2 to -0.1); p&lt;0.05</p> <p>Using autoregressive model</p> <p>Cervical disectomy patients Q3: -1.6 (0.0 to 3.2); p&lt;0.05</p> <p>Lumbar disectomy patients Q1: 0.6 (0.0 to 1.1); p&lt;0.05</p> <p>Lumbar disectomy patients Q3: 0.8 (0.1 to 1.5); p&lt;0.05</p> <p>California "worse" outlier hospitals</p> <p>AMI-related patients Q1: 2.4 (0.1 to 4.6); p&lt;0.05</p> <p>Cervical disectomy patients Q1: -1.1 (-2.2 to -0.1); p&lt;0.05</p> <p>Cervical disectomy patients Q3: 1.4 (0.4 to 2.4); p&lt;0.01</p> <p>Disectomy-related patients Q2: 1.1 (0.0 to 2.1); p&lt;0.05</p> <p>Disectomy-related patients Q3: 1.1 (0.1 to 2.2); p&lt;0.05</p> <p>Disectomy-related patients Q4: 1.2 (0.1 to 2.3); p&lt;0.05</p> <p>Using autoregressive model</p> <p>Disectomy-related patients Q1: -1.4 (-2.4 to -0.4); p&lt;0.01</p> <p>New York "better" outlier hospitals</p> <p>CABG patients month 1: 13.4 (4.3 to 22.6); p&lt;0.01</p> <p>New York "worse" outlier hospitals</p> <p>CABG patients month 2: -7.1 (-12.3 to -1.9); p&lt;0.01</p> <p>CABG-related (AMI) patients month 1: -4.5 (-8.5 to -0.6); p&lt;0.05</p> <p>CABG-related (AMI) patients month 4: -6.0 (-9.8 to -2.2); p&lt;0.01</p> <p>----</p> <p>Significant mean differences in actual minus predicted monthly patient volume based on patient characteristics in hospitals lauded for low risk-adjusted postoperative complication rate or mortality after specific surgery (all significant at p&lt;0.05)</p> <p>California, after lumbar disectomy</p> <p>Medicaid patients Q2: -0.17</p> <p>Hospital catchment area located inside Q4: 0.71</p> <p>Black patients Q2: 0.14</p> <p>Black patients Q4: 0.20</p> <p>New York, after CABG</p> <p>55-64 year old patients month 3: 4.65</p> <p>65-74 year old patients month 1: 8.40</p> <p>Commercial indemnity patients month 3: 7.49</p> <p>Medicaid patients month 3: 2.12</p> <p>Medicare patients month 1: 8.50</p> <p>Medicare patients month 2: 7.30</p> <p>Hispanic patients month 3: 2.55</p> <p>White patients month 1: 10.91</p> <p>----</p> <p>Significant mean differences in actual minus predicted monthly patient volume based on patient characteristics in New York hospital flagged for high risk-adjusted mortality after CABG (all significant at p&lt;0.05)</p> <p>HMO/PPO patients month 2: -2.59</p> <p>Medicare patients month 1: -4.43</p> <p>Medicare patients month 4: -4.18</p> <p>Medicare patients month 5: -3.90</p> <p>Black patients month 3: -1.13</p> <p>White patients month 2: -5.62</p>	None	None		<p>US Agency for Healthcare Research and Quality</p> <p>no conflicts stated</p>

Refid	Author, Year (QA)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/Conclusion	18. Funder of Research/Report
11687	Rosenthal 1997 (Good)	None	None	None		Picker/ Commonwealth Scholars Award Career Development Award from the Health Services Research and Development Service, Department of VA
1666	Shabino 2006 (Poor)	None	None	None		NR
491	Tu 2009 (Fair)	None	None	Not Studied	Authors' conclusion: This study demonstrated that a carefully designed publicly released report card based on high-quality clinical information did not result in a measurable system-wide improvement in 2 composite AMI or CHF process-of-care indicators at early feedback hospitals in Ontario	NR
5572	Vladeck 1988 (Poor)	One-way ANOVA detected no significant differences in occupancy rates between study periods among the three groups: $F=1.046$ , $p=.357$ , $df=2.67$  No statistical significance and actual occupancy rates went in opposite directions than expected (i.e., Hospitals with higher-than-expected mortality rates experienced higher occupancy rates following public release while those with lower-than-expected mortality rates actually experienced slightly higher occupancy rates. Those with as-expected mortality rates experienced a relatively level occupancy rate, but there was a very slight decrease.	Not Studied	Not Studied	Based on these results, the release of hospital mortality data in New York City did not impact consumers in expected directions. Moreover, based on ANOVA tests, there was no statistical significance among the three groups.	None Listed
10858	Wang 2011 (Good)	HOSPITAL: Hospital Quarterly Volume (n=1469 hospital quarters)  Mean volume: All CABG cases - 76.5 Low-severity CABG cases - 45.5 High-Severity CABG cases - 30.3  High Mortality Flag: All CABG cases -5.600 Low-severity CABG cases -4.477 High-Severity CABG cases -1.195  Low Mortality Flag: All CABG cases 5.125 Low-severity CABG cases 4.669 High-Severity CABG cases 1.578	None	None	Public reporting led to decrease in volume for unrated and poor performing surgeons, but interestingly, the volume of the high performing surgeons does not increase by an offsetting amount. They do not find statistically significant effect on hospital volume once we control for unobserved heterogeneity. Severity analysis results in similar results.	Unclear
8037	Werner 2010 (Good)	None	None	None		Pennsylvania Department of Health

# Appendix I. Hospitals: Qualitative Evidence

Section A: Contains columns 1 through 9 of all hospital qualitative studies (I1: I20)

Refid	Author, Year	1. Study Purpose	2. Geographic Location	3. Study Design/ Type	4. Sample/ Population	5. Procedure/ Additional Description if Needed	6. Outcomes	7. Name of Public Report or Subject Matter	8. KQ1: Results	9. KQ2: Results
162	Aryankhesal, 2010	To assess the degree to which patients and GPs in Iran are aware of the grading system and actual hospital grading results as well as the extent to which this influences their choice of hospital.	Tehran, Iran	Survey (descriptive)	N=104 patients/families completed surveys (147 approached, 40 excluded, 3 refused). 72% male respondents, even though many patients were women. This is because the woman's relative chose the hospital and was therefore the person interviewed.  104/129 surveys of GPs (Response Rate=81%).		Patients' awareness of hospital grading system, Patients' criteria for choosing their selected hospitals, Patients' reasons for not using the grading results in their hospital choice.  General practitioners' awareness of the grading results, GPs criteria for choosing hospitals for referring their patients.			
1886	Barr, 2006	To explore the impact of statewide public reporting of hospital patient satisfaction on hospital quality improvement (QI), in Rhode Island.	Rhode Island	Interviews	42 people out of 52 identified(81%): four executives in each eligible hospital	Interviewees are asked what QI activities were implemented in response to the public reports and what processes and structures were in place to accomplish improvement related to patient satisfaction.	Quality Improvement Activities	Rhode Island: State Report		

Refid	Author, Year	1. Study Purpose	2. Geographic Location	3. Study Design/ Type	4. Sample/ Population	5. Procedure/ Additional Description if Needed	6. Outcomes	7. Name of Public Report or Subject Matter	8. KQ1: Results	9. KQ2: Results
2660	Bensimon et al, 2004	To describe stakeholders' views about cardiac report cards	Canada	Interviews	58 Participants selected from 7 Canadian cities with major cardiac programs (Vancouver, Calgary, London, Toronto, Ottawa, Montreal, and Halifax) from six stakeholder groups: 15 administrators, 13 nurses, 12 cardiologists or internists, 7 outcomes researchers, 6 cardiac surgeons, 5 members of the media.	Open-ended interview questions to explore what participants think about cardiac report cards, what they believe report cards should contain, and how they would use cardiac report cards.	Perceived usefulness of performance data Opinions on content	Cardiac Report Cards: Generally		
11688	Bentley, 1998	To determine whether performance data causes hospitals to change their policies and practices.	Pennsylvania and New Jersey	Survey (descriptive)	Hospitals conducting CABG surgery in New Jersey and Pennsylvania	Intervention: Public Reporting Group 1: Pennsylvania Hospitals (public reporting; n=21; 84% Response Rate) Group 2: New Jersey Hospitals (No public reporting; n=8; 62% Response Rate)	All Self-reported by employee most knowledgeable in respective department:  Changes in Hospital Marketing linked to Performance Information  Changes in Hospital Governance linked to Performance Information  Changes in Patient Care linked to Performance Information	Consumer Guide to CABG Surgery	Not Studied	Not Studied

Refid	Author, Year	1. Study Purpose	2. Geographic Location	3. Study Design/ Type	4. Sample/ Population	5. Procedure/ Additional Description if Needed	6. Outcomes	7. Name of Public Report or Subject Matter	8. KQ1: Results	9. KQ2: Results
5521	Berwick, 1990	To explore hospital administrators reactions to the public release of HCFA mortality data.	US	Survey (descriptive)	195 (78% responses rates) hospital executives from a sample of 250 hospitals selected to represent hospitals with actual mortality lower, higher and near the center of the expected mortality as publicly reported by HCFA.	a 12-item survey asked for opinions on the accuracy and value of the HCFA report on an 5 point excellent to poor scale (8 items) as well as items about whether the report was used by the hospital.	Accuracy and value of Report Use of Report	HCFA Mortality Repot		
3266	Chassin, 2002	To summarize the CSRS experience by focusing on how physicians and hospitals responded to the program, what they did to improve, and what impacts the program had.	New York	Interviews	Interviews conducted with key physicians, hospital administrators, and state officials directly involved in quality improvement efforts at 4 (5?) hospitals identified in early reports as higher than average risk-adjusted mortality rate outliers: Winthrop Hospital, Erie County Medical Center, Strong Memorial Hospital, and Bellevue Hospital Center	NA	Quality Improvement Responses: open-ended	NYCSRS		

Refid	Author, Year	1. Study Purpose	2. Geographic Location	3. Study Design/ Type	4. Sample/ Population	5. Procedure/ Additional Description if Needed	6. Outcomes	7. Name of Public Report or Subject Matter	8. KQ1: Results	9. KQ2: Results
68	Dijs-Elsinga, 2010 (68)	To assess whether patients use information on quality of care (such as adverse outcomes) when choosing a hospital for surgery compared to more general hospital information.	Netherlands	Survey (descriptive)	Patients who underwent 1 of 6 (aorta reconstruction, cholecystectomy, colon resection, inguinal hernia repair, esophageal resection and thyroid surgery) surgical procedures in 2005-2006 in 3 hospitals. N=2122/ 1329 completed (62.6% response rate)	Survey asked what information people used to choose a hospital for their procedure in the past and what information they would use if they needed similar care in the future.	Use of information in choice of hospital (past and future)	Any available information; specific report not studied; hypothetical report card used to ask about format preferences	Not reported	Female gender (compared to male) vs. <65 years (compared to >65 years) vs. Intermediate level of education (compared to low level of education) vs. high level of education (compared to low level of education) Information about quality of care used in 2005-2006 to make decision about hospital: OR (95% CI) Percent of patients with adverse outcome after surgery: not significant for any comparison Percent of patients with little pain: 1.76 (0.59–5.25) vs. 5.69 (1.72–18.86); p<0.05 vs. 0.29 (0.12–0.72); p<0.05 vs. 0.26 (0.09–0.75); p<0.05 Percent of patients with pressure ulcers: not significant for any comparison Information about quality of care to be used in future to make decision about hospitals: OR (95% CI) Percent of patients with textbook outcomes: 0.96 (0.73–1.28) vs. 1.09 (0.85–1.39) vs. 1.39 (1.07–1.82); p<0.05 vs. 2.08 (1.54–2.81); p<0.05 Procedure-specific (adverse outcome) information: 1.30 (0.96–1.75) vs. 1.24 (0.96–1.60) vs. 1.36 (1.03–1.81); p<0.05 vs.



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68	Dijs-Elsinga, 2010 (68) <i>can't</i>									<p>2.25 (1.65–3.06); p&lt;0.05</p> <p>The number of surgeries performed per year: 1.11 (0.82–1.51) vs. 1.60 (1.22–2.09); p&lt;0.05 vs. 1.32 (0.98–1.79) vs. 2.40 (1.74–3.31); p&lt;0.05</p> <p>Percent of patients with reoperation/re admittance to hospital: 1.04 (0.77–1.40) vs. 1.42 (1.09–1.84); p&lt;0.05 vs. 1.27 (0.95–1.71) vs. 2.00 (1.46–2.74); p&lt;0.05</p> <p>Number of medication errors: 0.96 (0.70–1.31) vs. 1.56 (1.19–2.05); p&lt;0.05 vs. 1.73 (1.27–2.35); p&lt;0.05 vs. 2.51 (1.81–3.49); p&lt;0.05</p> <p>Percent of patients with wound infection: 1.16 (0.84–1.61) vs. 1.24 (0.93–1.64) vs. 1.79 (1.29–2.48); p&lt;0.05 vs. 2.39 (1.69–3.38); p&lt;0.05</p> <p>Percent of patients with an adverse outcome after surgery: 1.00 (0.72–1.38) vs. 1.53 (1.15–2.05); p&lt;0.05 vs. 1.36 (0.98–1.89) vs. 2.08 (1.47–2.93); p&lt;0.05</p> <p>Percent of patients with little pain: not significant for any comparison</p> <p>Percent of patients with pressure ulcers: 0.98 (0.62–1.55) vs. 0.83 (0.56–1.23) vs. 1.62 (1.01–2.59); p&lt;0.05 vs. 1.73</p>

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68	Dijs-Elsinga, 2010 (68) <i>can't</i>									(0.96–1.75) vs. 1.24 (0.96–1.60) vs. 1.36 (1.03– 1.81); p<0.05 vs. 2.25 (1.65–3.06); p<0.05 The number of surgeries performed per year: 1.11 (0.82–1.51) vs. 1.60 (1.22– 2.09); p<0.05 vs. 1.32 (0.98–1.79) vs. 2.40 (1.74– 3.31); p<0.05 Percent of patients with reoperation/re admittance to hospital: 1.04 (0.77–1.40) vs. 1.42 (1.09–1.84); p<0.05 vs. 1.27 (0.95–1.71) vs. 2.00 (1.46–2.74); p<0.05 Number of medication errors: 0.96 (0.70–1.31) vs. 1.56 (1.19– 2.05); p<0.05 vs. 1.73 (1.27–2.35); p<0.05 vs. 2.51 (1.81–3.49); p<0.05 Percent of patients with wound infection: 1.16 (0.84–1.61) vs. 1.24 (0.93–1.64) vs. 1.79 (1.29– 2.48); p<0.05 vs. 2.39 (1.69–3.38); p<0.05 Percent of patients with an adverse outcome after surgery: 1.00 (0.72–1.38) vs. 1.53 (1.15–2.05); p<0.05 vs. 1.36 (0.98–1.89) vs. 2.08 (1.47–2.93); p<0.05 Percent of patients with little pain: not significant for any comparison Percent of patients with pressure ulcers: 0.98 (0.62– 1.55) vs. 0.83 (0.56–1.23) vs. 1.62 (1.01–2.59); p<0.05 vs. 1.73

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68	Dijs-Elsinga, 2010 (68) <i>can't</i>									(1.04–2.88); $p < 0.05$ Information about procedure-specific information to be used in future to make decision about hospitals: OR (95% CI) Possibility of minimally invasive surgery: not significant for any comparison Experience with procedure in presence of cancer: not significant for any comparison Average duration of hospital stay: not significant for any comparison Percent of patients who died after surgery: not significant for any comparison Percent of patients with an extended: not significant for any comparison
49	Fasolo, 2010	To understand how people interpret and use comparative quality information about hospitals.	England	Focus Groups	7 focus groups 44 participants recruited by flyers, and random-sampling mailing and phone calls	The focus group had 3 stages 1. open discussion about how participants would choose a hospital for a serious condition that required planned care 2. asked to sort cards with 16 indicators in order of importance and select 3 most important individually and after group discussion 3. based on mock score card, selected from among 3 hospitals	Comprehension Priorities among indicators Selection and decision processes	NHS Choices, Department of Health Website in England which included comparative hospital performance indicators.		

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1318	Geraedts, 2007	To determine patient and physician opinion of the relevance of the reported quality indicators or choosing or referring to a hospital.	Germany	Interviews	50 General practitioner patients. 50 General practitioners		Understandability of quality indicators	Nationally Mandated Hospital Report (Germany)		
3012	Ginsburg, 2003	To explore the factors that influence frontline and midlevel hospital managers' perceptions of usefulness of comparative reports of hospital performance.	Ontario, Canada	Survey (descriptive)	202 hospital managers in stroke or cardiac care out of 344 (59%) response rate, from 89 hospitals included in the public report.	Compares the impact of data characteristics, past experience with performance data and improvement culture on the perceived usefulness of the performance data	Perceived usefulness of performance data	Hospital Report '99		
5524	Gross 1989	Hypothesized that the majority of consumers still were judging quality by relational items and were not using government mortality statistics to influence their choice of hospital.	New York	Survey (descriptive)	186 Champus (military) health plan beneficiaries and 200 general respondent in NY	15-item questionnaire	Use of information on hospital quality	Not specified		
787	Guru 2009	To survey and understand concerns of Ontario cardiac surgeons regarding performance reports.	Ontario, Canada	Descriptive Survey	Cardiac surgeons in Ontario, Canada. N=52		Self reported views on the positive and negative impact of public reports			
4539	Hannan, et al, 1997	To determine the reaction of New York cardiologists to the New York CABG surgery reports.	New York	Survey (descriptive)	Surveys regarding cardiologists' opinions and use of the June 1995 NY CABG report were mailed to all (1267) NY cardiologists listed in the State Education's Department's Physician master File as specializing in cardiology. 36% response rate (n=450).		<p>All self-reported:</p> <p>Discussing information with patients: Yes or No</p> <p>The following use "Very much," "Somewhat," and "Not at all" scales: Accuracy of report Attitudes towards format of report Impact of report on referrals</p> <p>Usefulness in making referral decisions for patients needing CABG surgery: 5-point Likert scale: Not at all Useful (1-2); Somewhat useful (3); Extremely useful (4-5)</p>	New York CABG Report		

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1414	Hibbard, 2007	To examine health literacy, numeracy and patient activation assessing the contribution of each to the comprehension of comparative health care performance reports and their use in making an informed choice.	US, Not specified	Lab-type Experiment	Convenience sample of 303 employed-age adults (18-64 years)  Same respondents as 6054..	Participants were shown hospital performance data in report cards that varied in terms of the number of hospitals, the number or performance measures, and types of information included. They also completed test of health literacy, numeracy, and patient activation.	Health literacy, numeracy and patient activation	Hypothetical Hospital Reports	None	None
782	Kang, 2009	To assess the extent of consumer use of publicly released hospital performance information by the National Health Evaluation Program (HEP) in Korea.	Seoul, South Korea	Descriptive Survey	Patients who visited the outpatient department at 4 general hospitals in Seoul, between 8/20/09 and 9/1/06.  N= 385 (385/400)		Consumer use of hospital performance information, Attitude toward the Hospital Evaluation Program, Degree of understanding of the evaluation criteria.	Hospital Report of the National Health Evaluation Program		
6672	Khang, 2008	To examine women's awareness of the public release of Cesarean section rates according to socio-demographic characteristics in South Korea.	South Korea	Survey (descriptive)	South Korean women aged 20-49 years old. 57.3% of those eligible completed surveys. N=505	Sample using proportionate quota and systematic random sampling. After calling 6224 numbers, 882 women were eligible.	Awareness of report: self-reported by respondent	Cesarean section rates in Korea	Not Studied	Not Studied
1434	Laschober 2007	Explains how participation in public reporting programs has helped to spur changes in: the attention that management gives to quality; internal QI programs and documentation efforts; the level and type of staff effort devoted to QI; and quality scores.	USA	Survey (descriptive)	Senior executives and directors of QI department of 800 relevant U.S. hospitals		Quality Improvement and Awareness	Hospital Compare		
2853	Longo and Everett, 2003	To evaluate how patients view healthcare consumer reports, whether healthcare consumer reports lead to changes in patient behavior, and which aspects of reports are the most important/helpful to patients.	Colombia, Missouri	Surveys (descriptive)	Outpatients at UMHC clinics; N=925	Surveys administered to outpatients while waiting for appointment. Shown report and then asked to fill out questionnaire before leaving.	All self-reported on survey: Patient views on: Perceptions of report: single question Potential use of report Most helpful/important aspects of report	University of Missouri Health Sciences Center Consumer Report	Not Studied	Not Studied

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4877	Luce 1996	We studied how 17 acute care public hospitals in California used these Risk-adjusted mortality of outcomes (RAMO) data for quality improvement purposes following their initial distribution.	California	Survey (descriptive)	22 acute care public hospitals that are members of the California Association of Public Hospitals and Health systems		Use of the RAMO data relevant to their own hospitals.	CHOP and HCFA Mortality report		
2912	Magee, 2003	To investigate view of patients and members of the public of published information on healthcare providers	England	Focus Group	6 Focus groups each in a different location where the local acute care trusts had 3 or 0 star ratings. One groups was carers, one all ethnic minorities, and all with recent inpatient experience.	Participants were asked their views on measuring and comparing performance. Examples from the Department of Health and a commercial site (Dr. Foster) were reviewed and discussed.	Awareness of report cards Views on public reporting Assessment of different report cards			
2938	Mannion, 2003	To examine the he impact of publication of Scottish (CRAG) clinical outcome indicators on four key stakeholder groups: health care providers, regional government health care purchasers, general practitioners and consumer advocacy agencies.	Scotland	Interviews and Focus Groups	8 hospitals were the subject of case studies 71 of 150 primary care randomly selected practitioners were surveyed 16 of 16 local health councils responded to a postal survey	Interviews and focus groups conducted over an extended period as part of a research and practice improvement collaboration	Awareness Types of Information used	Clinical Resource and Audit Group (CRAG) clinical outcome indicators for all hospital Trusts and Health Boards in Scotland		
11682	Mannion, 2005	To explore the impact of the star ratings of acute care hospitals in England	England	Interviews	61 Interviews with managers and clinical staff at 6 sites from : 4 with low scores and 2 with high on the star ratings. Sites were randomly selected within rating strata. Interview subjects were purposefully selected.	Interviews included questions on organizational dynamics, perceptions and experience with performance measures, and the impact of the ratings on the organizations.	Responses to Star Ratings	Star ratings for English National Health Service		Unintended and dysfunctional responses included: 1. tunnel vision that focused on what is measured. 2. pressure to meet targets 3. low performing sites had trouble recruiting staff 4. site with high ratings did not feel the need to improve

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568	Mazor, 2009	To conduct interviews to explore patients' understanding of health care associated infections (HAIs) and public reporting of rates.	Worcester, MA	Interviews	59 people who responded to invitations sent to people selected from the residents of Worcester, MA	Interviewees were shown a 2006 PA report on HAIs and asked for reactions as well and suggestions for improvement. Later interviews included reviews of multiple versions of improved report cards and the last interviews included viewing web-based reports.	Reactions to reports Ability to select hospital based on information	Actual and revised reports on HAIs		
6609	Mazor, 2009	To evaluate different approaches to publicly reporting data on healthcare acquired infections (HAIs) and determine if this would influence hospital choice.	Worcester, MA	Survey (descriptive)	201 completed surveys (25% of all mailed or 34% of all sent to a deliverable address) sent to a random sample of residents selected from a list maintained by local government.	Eight versions of a report were assigned at random and mailed along with a questionnaire. Version varied in terms of consistency of the indicators, use of words vs. graphs, and whether confidence intervals were provided or not. The survey asked for ratings of understandability, importance in choice of hospital, comprehension of specific information, and demographic information.	Understandability Role of Information in Decision Making	Different versions of a fictional report on Healthcare Acquired Infections		

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3000	Mehrotra, 2003	To determine if hospital report cards created by employer coalitions prompt quality improvement	11 communities in the USA	Interviews	11 communities with employer driven hospital report cards produced produced through December 2001; 35 organizations and 44 interviewees included report card producers and hospital representatives	Interviewees were asked open-ended questions about the report card success and barriers to success.	QI activities	Various created by employer coalitions		
9936	Merle, 2009	To assess what impact a mandatory report card on infection control activity could have on patients' hospital choice.	Upper Normandy France	Survey (descriptive)	381 total--133 Inpatients, 157 discharged patients, and 91 inpatient visitors in 5 reference hospitals and 24 others randomly selected from those in the area.	Survey included demographics, knowledge of infection control, personal past history of hospital infection. Respondents were asked if they wanted infection control information and were required to select 3 other reasons for selecting a hospital.	Factors Influencing Choice of Hospital	French mandatory report card on infection control activity (ICALIN)		
50	Moser, 2010	To gain insights into how patients make decisions using comparative consumer information	The Netherlands	Focus groups and interviews	18 people who had undergone a total hip or total knee replacement no longer than five years ago. Most were elderly--mean age 74	2 focus groups; one with 10 people; one with eight were interviewed individually before the group as well.	Role of report in decision making Decision process Views on Report Card	CAHPS--Dutch version for Hospitals		
6054	Peters, 2007	To test the idea that all consumers, but the less numerate in particular, will benefit from careful attention information presentation and to the potential cognitive burden imposed by comparative data, reducing this burden when possible, and highlighting the meaning of important information.	US (not sure it says)	Lab-type Experiment	303 adults 18-64; half with lower education and 55% without health insurance. Same respondents as 1414.	Participants were randomly assigned to receive easier to evaluate formats or common current formats of information about hospitals and health plans as well as a numeracy evaluation. This allowed three separate analyses/studies	Comprehension	NA		



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6739	Pham, 2006	To examine the impact of quality reporting on hospitals' data collection and review processes, feedback and accountability mechanisms, quality improvement activities, and resource allocation.	12 US Metropolitan Areas participating in the Community Tracking Study	Interviews	111 Interviews, 98 of which were with executives at the 2-4 largest hospital in each market. others were with hospital association representatives, and organizations that produce report cards.		Involvement in Public Reporting Activities Influence of Report Cards of Practice	Multiple		
1992	Putnam, 2006	To explore physicians perceptions of quality indicators for Acute MI and CHF.	Canada: Ontario and Nova Scotia	Focus Groups	6 focus groups with 6-8 participants. 3 in Ontario where hospital-specific data has been published and 3 in Nova Scotia where it has not. Participants were family and ER physicians, internists and cardiologists.	Participants were asked if having performance information that was public would help improve their care of patients.	Perceptions of Quality Indicators	Source of quality indicators not stated		
4479	Rainwater, 1998	To explore the impact of reports from CHOP on efforts to improve quality of care and patient outcomes. Hypothesize that public dissemination of outcomes data would motivate providers to investigate ways to improve their quality of care.	California	Interviews	QI key informants at hospitals previously identified by hospital CEOs: 39 interviews		Patient responses to semi-structured interview questions re: overall views, usefulness, and limitations of CHOP	CHOP	Not Studied	Not Studied
2869	Rainwater, 2003	To explore whether health maintenance organization (HMO) executives in are familiar with hospital report cards, whether they find the report cards useful (and if not, why not), and how they weight such data relative to other factors in selection hospitals to contract with.	California	Survey (descriptive)	30 of 47 (63.8%) contacted representatives of all licensed HMOs in the state at the time of the study	Responding on paper or by phone, executives were asked to review a list of factors that might affect their contracting choices and rate on a 1 to 5 scale where 5 is extremely important; report what information they used in the past year, and whether they were aware of several public reports.	Factors considered in contracting with Hospitals	Several available in CA at the time.		

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843	Reeves, 2008	To document the attitudes of NHS staff toward the national patient survey program and the drivers and barriers to the use of the results.	England	Interviews	24 completed interviews with lead persons for patient surveys at hospitals. 27 were selected from 169 to represent differences in performance, size and geographical location		Perceptions of Surveys Use Barriers to use	NHS National Survey Programme		
2095	Richard et al, 2005	To describe cardiac patients' views about cardiac report cards	Canada	Interviews and focus groups	91 Cardiac patients selected from 7 Canadian cities with major cardiac programs: Vancouver (10), Calgary (13), Winnipeg (11), Toronto (22), Ottawa (14), Montreal (7), and Halifax (14). 63 individual interviews and 6 focus groups	Open ended questions about cardiac report cards.				

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4121	Romano, 1999	To determine whether state hospital report cards in CA and NY are viewed more favorably than HCFA efforts; whether a report based on clinical data is viewed more favorably than one based on administrative data, and whether attitudes toward report cards are related to hospital characteristics.	New York and California	Survey (descriptive)	Opinions and knowledge about state report cards by hospital chief executives in CA and in NY  Total of 398 hospitals listed in 1996 CHOP report and 31 listed in 1996 CSRS report eligible for study. Total response rate for usable CA surveys = 66.6% (n=249), and for usable NY Surveys = 87.1% (n=27). Overall Response Rate = 73.3%	No Intervention Comparison Groups: CA hospitals vs NY hospitals listed in report cards on myocardial infarction and coronary bypass mortality	Overall Quality Rating: Self-reported average ordinal score of 6 questions  Usefulness score: Self-reported agreement or disagreement with 4 statements regarding uses of states' outcomes data: improving the quality of care, improving quality of medical records coding; negotiating with health plans; marketing or public relations  Knowledge score based on agreement or disagreement with factual statements regarding risk-adjustment methods. Opinions of Ease of Interpretation and Manner of Release	CHOP; NY CSRS	Not Studied	

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4366	Rosenthal, 1998	To present four case studies of efforts that were initiated by hospitals to improve patient outcomes, in response to data disseminated by CHQC.	Greater Cleveland, OH	Case Studies	4 hospitals in Cleveland, OH	<p>University Hospitals of Cleveland (UHC): January through June 1993 vs. July through December 1995.</p> <p>LakeEast Hospital: 1996 vs January through June 1997</p> <p>Parma Community Hospital: January 1994 through December 1994 vs 1996 and 1997</p> <p>Allen Memorial Hospital: July 1993 through June 1995 vs 1996</p>	<p>UHC: CABG patients' Mean observed length of stay, extubation time.</p> <p>LakeEast: overall rate of C-section deliveries, primary C-section rates (women without prior C-section), VBAC success rate, use of epidural anesthesia.</p> <p>Parma: C-section rates and VBAC success rates</p> <p>Allen: Pneumonia mortality</p>	CHQC	<p>UHC: Mean observed length of stay: January through June 1993=11.1 days, July through December 1995=7.6 days (p&lt;.01). Extubation within 8 hours of surgery: 1994=fewer than 10%, 1995= nearly 40%.</p> <p>LakeEast: Overall C-section rate: already declining prior to intervention: 1992=28.6%, 1993=23.7%, 1994=22.3%, 1995=21.4%. After intervention, 1996=17.1%, Jan-Jun 1997=13.0%. Primary C-section rates: 1996=10.3%, Jan-Jun 1997=8.6%. Successful VBAC per attempted VBAC: 1996= 74.8%, Jan-Jun 1997=81.0%. Use of epidural anesthesia: 1996=60%, Jan-Jun1997=62%.</p> <p>Parma: 1996: 79 patients identified as repeat C-section candidates. 42 (53%) underwent a trial of labor, 30 (38%) experienced successful VBAC deliveries. 1995: 22% VBAC rate (change, p&lt;.05). 1st quarter 1997: 40%. Overall C-section rate: 1994=22%, 1995=25%, 1996=21% and 1st Q 1997=18%.</p> <p>Allen: 1996 Predicted mortality: 4.7%, actual: 3.0%.</p>	NR

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4883	Schneider and Epstein, 1996	To find out whether cardiologists and cardiac surgeons were aware of the Pennsylvania Consumer Guide to Coronary Artery Bypass Graft Surgery report, and if so, to determine their views on its usefulness, limitations and influence on providers.	Pennsylvania	Survey (descriptive)	Opinions and attitudes of Cardiac Surgeons and Cardiologists in Pennsylvania. Randomly selected sample of 50 percent of Pennsylvania cardiologists and cardiac surgeons. Total response rate out of 697 physicians was 65%. 64% response overall response rate among cardiologists and 74% among cardiothoracic surgeons. After excluding incomplete surveys or ineligible physicians, n=337 (279 cardiologists and 58 cardiac surgeons)	NA	<p>All self reported:</p> <p>Awareness of the guide</p> <p>Opinion of usefulness: importance of risk-adjusted mortality; importance of clinical outcomes other than mortality; Importance of Consumer Guide Ratings; Influence of consumer guide rating on referral recommendations; Discussed Consumer Guide with percentage of patients.</p> <p>Opinion of limitations: multiple questions related to potential limitations</p> <p>Influence on providers/Access to Care: 5 Point Likert scale, for surgeons: Willingness to operate; for cardiologists: difficulty finding surgeons willing to operate</p>	Consumer Guide to Coronary Artery Bypass Graft Surgery	Not Studied	<p>Difficulty Finding a Surgeon Willing to Operate in Most Severe Cases (for Cardiologists, by % responding to each option):</p> <p>Much More Difficult: 18</p> <p>More Difficult: 41</p> <p>No Change: 31</p> <p>Less Difficult: 8</p> <p>Much less difficult: 2</p> <p>Willingness to Operate in Most Severe Cases (For Cardiac Surgeons, by % responding to each option):</p> <p>Much Less Willing: 35</p> <p>Less Willing: 28</p> <p>No Change: 37</p> <p>More Willing: 0</p> <p>Much More Willing: 0</p>

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4411	Schneider and Epstein, 1998	To examine the awareness and use of a statewide consumer guide that provides risk-adjusted, in-hospital mortality ratings of hospitals providing cardiac surgery.	Pennsylvania	Survey (descriptive)	Random selection of patients who underwent CABG surgery during the previous year at 1 of 4 hospitals (Sampled 196 from each hospital). 60% completed telephone surveys; Of eligible patients, 70.4% response rate (n=474). Hospitals chosen all performed 400 or more CABG operations and were located in different regions of the state.	Case Study: All patients had CABG surgery	All Self-Reported: Awareness of Consumer Guide: extent of awareness before or after undergoing cardiac surgery Use of Consumer Guide: knowledge of how the Consumer Guide's mortality rating had ranked their hospital, surgical group, or surgeon; did patient discuss mortality rating with health professionals General Interest in Performance Reports: 3 measures of patient interest: a) described the report and gauged interest; would they change choice if they needed another CABG surgery; willingness to pay for the guide Constraints or Barriers limiting patients' Use of Consumer Guide: 5 potentially important constraints: time, distance to hospital, opportunity to leave hospital between decision and actual operation, cost, and restrictions imposed by insurance companies/health plans	Pennsylvania Consumer Guide to CABG Surgery	Not Studied	Not Studied

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6794	Schwartz, 2005	To learn how Medicare patients made decisions about where to undergo major surgery and how they would make future decisions.	USA	Survey (descriptive)	510 randomly selected Medicare beneficiaries having undergone an elective, high risk procedure about 3 years before for abdominal aneurysm repair (n=103), heart valve replacement surgery (n=96), or resection of the bladder (n=119), lung (n=128) or stomach (n=64) for cancer. Of eligible respondents (n=751) 68% response rate (n= 510)		All self reported:  Experiences with major surgery: how the respondent decided where to have surgery, what factors influenced this choice; Respondents' awareness and reaction to surgical performance data: work volume, patient mortality, nurse:patient ratios; Two Hypothetical scenarios: what advice to a friend undergoing surgery and reactions to Medicare publishing a list of best hospitals for different surgeries.	NA	Not Studied	Not Studied
2053	Sofaer, 2005	To identify the domains and items in CAHPS for hospitals that are of greatest interest to patients	Baltimore, Los Angeles, Phoenix, and Orlando	Focus groups	16 focus groups: homogenous by type of health care coverage (Medicare, non-Medicare), and type of recent hospital experience (urgent admission, elective admission, maternity admission, no admission	People who were admitted in the past were asked to describe aspects of the experience and all groups started with an open-ended discussion of the quality they associate with a high quality hospital. Then they were given the original CAHPS items and were asked to indicate and discuss what items were and were not important and finally to circle the two most important.	Importance of Domains Value related to hospital choice	CAHPS		

Refid	Author, Year	1. Study Purpose	2. Geographic Location	3. Study Design/ Type	4. Sample/ Population	5. Procedure/ Additional Description if Needed	6. Outcomes	7. Name of Public Report or Subject Matter	8. KQ1: Results	9. KQ2: Results
2982	Tu and Cameron, 2003	To determine the impact of Canada's first report featuring hospital-specific AMI performance measures.	Ontario, Canada	Survey (descriptive)	Opinions and reported hospital-level responses to public report. Mailed surveys to all hospitals in Ontario (n=121 eligible hospitals) for the surgeon most responsible for cardiac care to respond. 51 completed surveys; response rate = 41%		All self reported by hospital cardiac surgeon: Changes in AMI care made at hospitals Limitations of the Cardiac Atlas Views on the impact of the cardiac atlas	ICES Atlas (Ontario Cardiac Surgery Report Card)	Not Studied	Not Studied



**Section B: Contains columns 10 through 15 of all hospital qualitative studies (I21: I51)**

Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
162	Aryankhesal, 2010	<p>8/104 (7.7%) patients were aware of the existence of the hospital grading system. 6/104 (5.8%) knew their chosen hospital's grade. 3 of these patients confused grade and rank and thought that a grade of 1 meant that the hospital was the top of all country's hospitals. No statistically significant difference between men and women's awareness.</p> <p>Patients' criteria for choosing their selected hospitals (frequency, %): Suggestion from relatives about the hospital: 23, 18.1% Patient's health insurance types: 22, 17.3% Patient's former experiences in the hospital: 21, 16.5% Low hospital charges: 21, 16.5% Patient's former experiences with the physician: 17, 13.4% Suggestion of the relatives about the physician: 14, 11% Patient or relatives work there: 6, 4.7% Poor experience in other hospitals 2, 1.6% Hospital's reputation: 1, 0.8% Hospital's grade: 0, 0%</p> <p>GPs awareness of grading results: 12/103 (11.7%)</p> <p>Ranking of GPs criteria for choosing hospitals for referring their patients: 1. Patient economic situation 2. Patient insurance type 3. Hospital quality of care 4. Hospital specialists 5. Patient preference 6. Travel distance 7. Hospital reputation</p>				<p>Awareness of the Iranian hospital grading system and its results was low among both patients and GPs</p>	<p>Iranian Ministry of Health and Medical Education and Iran University of Medical Sciences</p>

Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
1886	Barr, 2006	<p>Survey Domains # Hospitals with Quality Improvement (QI) Activity</p> <p>Admitting 9</p> <p>Patient education 9</p> <p>Nursing care 8</p> <p>Treatment results 8</p> <p>Food service 8</p> <p>Other staff courtesy 6</p> <p>Physician care 5</p> <p>Comfort/cleanliness 4</p> <p>Patient loyalty 1</p> <p>Hospitals also mentioned quality initiatives that were not related to survey domains such as customer service or ER waiting.</p> <p>Hospital identified a person/position as the leader for QI reported general high levels of support from key personnel.</p> <p>Barriers included staff commitment and buy-in, staffing issues and insufficient infrastructure.</p>				<p>RI's experience suggests public reporting can be used to identify opportunities for improvement in and across hospitals and in this case led to statewide initiatives.</p>	State of RI

Refid	Author, Year	10. KQ3:Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
2660	Bensimon et al, 2004	Report cards should be used to improve the quality of care, and this should be the primary purpose of the report card.		<p>A majority of interviewees believe that the purpose of cardiac report cards should be to increase accountability of quality care. This also would facilitate a way of 'correcting' surgeons and hospitals that do not perform 'within the expected norms.'</p> <p>"Several" respondents emphasized the utility of cardiac reports as a means of educating the public so that they have informed decisionmaking.</p> <p>----</p> <p>Re: what the report cards should contain: Stakeholders agreed that providing patient factors (e.g., co-morbidities), clinical factors (e.g., high quality surgeons with high mortality rates due to tackling more difficult cases), and institutional contextual factors (e.g., quality assurance committees, values, etc.) in cardiac report cards is essential</p> <p>----</p> <p>Majority felt it was important to provide both institutional and individual surgeon data. Others thought it better to only use institutional data because surgeons do not work alone.</p> <p>Some worried that public disclosure at the individual level would lead to hysteria in the public, bad reputations for surgeons, too much detail for the general public, would violate surgeons' privacy, and would be unnecessary for improving the quality of care.</p> <p>-----</p> <p>Risk-adjustment is important for adequate comparison. Majority were skeptical of the validity and reliability of the clinical data. Report Cards should include both health outcomes and process measures. They should show recent data. Report cards should be easy to understand by the general public.</p> <p>-----</p> <p>Re: Dissemination: Best way to release data is via the Internet and through the media.</p>		<p>Interviewed various stakeholders (though omitted cardiac patients) about their opinions about cardiac report cards and how they would be used. Majority felt that they should be used for quality improvement and for public education/decisionmaking. There was not wholesale agreement about whether they should include institutional and individual level data or only institutional. Potential concerns included accuracy of data, timeliness of release, and ability for the public to understand the data.</p>	<p>The Heart and Stroke Foundation of Canada; The Canadian Institutes for Health Research's Interdisciplinary Health Research Team Program to the Canadian Cardiovascular Outcomes Research Team. One author supported by Ontario Ministry of Health and Long-term Care Career Scientist Award</p>
11688	Bentley, 1998	<p>% Responding with 'Yes' to Sources of Performance Information that Became a Factor in Hospital Marketing, Governance, or Patient Care Changes: [Change Linked to Performance Info: PA, NJ; Of those making changes due to Performance Info, Government Agency was the Source: PA, NJ ]</p> <p>Hospital Marketing Changes:%</p>	Not Studied	Not Studied	Not Studied	<p>The authors use the generic terminology of "information from a government agency" as an indicator of public reports and see what percentage of hospitals in Penn, where public reporting exists use this to improve marketing, governance and patient care. They also have two</p>	Pennsylvania and New Jersey

Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
		<p>hospitals using performance information to recruit staff thoracic surgeons and/or residents: 38, 0; 88, 0</p> <p>Hospital Governance Changes:  % hospitals establishing administration mechanisms that use performance information to monitor heart surgeons and hospital support staff: 77, 88; 60, 14  % hospitals with governing board requesting comparative reports for hospital outcomes and charges for heart surgery within a given market area: 57, 50; 92, 75</p> <p>Hospital Patient Care:  % hospitals starting a continuous quality improvement program to improve practice patterns in deliver of heart surgery: 62, 100; 39, 38  % hospitals using performance info which identifies heart surgeons or groups by names to improve coding of medical records: 29, 13; 17, 0  % hospitals devoting a larger share of its financial resources to improving the quality of its heart surgery program: 38, 56; 0, 56  % hospitals hiring consultant to improve outcomes and/or control costs of heart surgery: 43, 38; 56, 0  % hospitals using information identifying surgeons and surgeon groups to devote more financial resources for keeping medical records: 43, 38; 78, 33</p> <p>Note: other sources of performance information included Private Consultant of Hospital Association and Internal Department</p>				<p>other categories for source of information: a) Private Consultant; b) Internal Department. They present the top 5 answers in each category (I only abstracted the ones relevant to our review) and compare these percentages with hospitals reporting in New Jersey where there is not any public reporting (however, NJ is right next to both PA and NY, two states with PR). In general, Pennsylvania hospitals reported using performance information more than NJ, but not in all questions. Further, in some instances, NJ hospitals indicated that they used "government agency" information. The authors attribute this to using Penn's and NY's report cards for benchmarking, but there is certainly the possibility that the use of "government agency" was ambiguous.</p>	
5521	Berwick, 1990	<p>All hospitals regardless of their rating held very negative views of the HCFA report.</p> <p>The lowest possible rating (poor) was given by 70% of the respondents on the question of usefulness of the data to the hospital, by 54% on accuracy of the data, and by 85% on usefulness of the data to consumers. Only 31% of the respondents said that they had used the data at all for internal purposes and 20% reported that the data release had caused problems for the hospital. Hospitals in the high-mortality group were more likely than others to report both use of the data and problems from its release.</p>				<p>View of the report are generally negative and few report using it. There is general resistance to the data and public reporting that needs to be overcome if public reporting is to lead to improved performance.</p>	Harvard Community Health Plan Foundation

Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
3266	Chassin, 2002	<p>Winthrop University Hospital: After being put on probation by the state Department of Health, the hospital recruited its first full-time cardiac surgery chief. He concentrated cardiac surgery on a single floor of the hospital and added new nurse specialists and physician assistants dedicated to cardiac surgery. Installed a dedicated cardiac anesthesia service. Risk-adjusted mortality fell from 9.2% in 1989 to 4.6% in 1990, and to 2.3% in 1991. In 1998, Winthrop had lowest risk-adjusted mortality rate at .82%.</p> <p>----</p> <p>Erie County Medical Center: Suspended services in January 1990 to reorganize. Changes included: establishing cardiac surgery specific QA program, credentialing and continuous evaluation of surgeon performance, training dedicated cardiac anesthesiologists, agreeing to create designated cardiac surgery intensive care beds and to recruit a permanent, full-time service chief. Hospital resumed surgeries under probation in April 1990. Full-time service chief hired in 1993 and new staff were hired, previous surgeons stopped performing cardiac surgery, chief introduced operating microscope to cardiac surgery and had weekly teaching conferences. From 1989-1991, RAMR was 7.31%; from 1993-1995, RAMR was 2.51%; RAMR fell to 1.77% from 1996-1998. Volume also increased over time.</p> <p>----</p> <p>St. Peter's Hospital: In 1992, had an average overall RAMR, but RAMR for emergency cases was 26% (vs. 7% state average). A multidisciplinary review of emergency case management revealed that physicians did not take enough time to stabilize patients before surgery. Major management changes in emergency patients led to a 0% mortality rate among emergency cases in 1993.</p> <p>----</p> <p>Strong Memorial Hospital: Individual doctors had differing rates.</p>				Hospitals that had higher than the state average risk-adjusted mortality rates improved dramatically by taking nuanced, case-specific approaches to quality improvement.	

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3266	Chassin, 2002 <i>con't</i>	<p>Review determined that the chief surgeon was often booked with elective cases and not available for emergency cases. Another doctor often called in for these cases, but was not qualified in adult cardiac surgery. Another doctor specializing in adult cardiac surgery was hired and the chief surgeon rearranged his schedule to be available for difficult cases and other doctors quit performing CABG surgery. Sustained improvements resulted.</p> <p>-----</p> <p>Bellevue Hospital: Voluntarily suspended cardiac surgery in 2000 due to high RAMRs. Numerous changes included: redesign of service with objective of creating a fluid, multidisciplinary team, hiring nurse practitioners and physician assistants dedicated to caring for cardiovascular surgery patients, hiring a new team of perfusionists, retraining of nurses, limiting the number of surgeons from a neighboring hospital, and hiring first, full-time cardiac surgeon.</p>					

Refid	Author, Year	10. KQ3:Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
68	Dijs-Elsinga, 2010 (68)	Not reported	Not reported	Not reported	<p>Female gender (compared to male) vs. &lt;65 years (compared to &gt;65 years) vs. Intermediate level of education (compared to low level of education) vs. high level of education (compared to low level of education)</p> <p>General hospital information used in 2005-2006 to make decision about hospital: OR (95% CI)</p> <p>Hospital has a good reputation: 0.63 (0.46-0.86); p&lt;0.05 vs. 0.98 (0.75-1.28) vs. 0.82 (0.61-1.10) vs. 0.88 (0.63-1.23)</p> <p>Hospital atmosphere is friendly: 0.88 (0.65-1.20) vs. 0.69 (0.53-0.89); p&lt;0.05 vs. 0.81 (0.60-1.08) vs. 0.69 (0.50-0.94); p&lt;0.05</p> <p>Easy access by public/own transportation: 0.99 (0.74-1.32) vs. 0.60 (0.47-0.77); p&lt;0.05 vs. 0.99 (0.76-1.30) vs. 0.92 (0.68-1.25)</p> <p>Distance to hospital: 0.99 (0.74-1.32) vs. 0.84 (0.66-1.08) vs. 1.44 (1.09-1.90); p&lt;0.05 vs. 1.63 (1.21-2.21); p&lt;0.05</p> <p>Good parking: 0.90 (0.67-1.21) vs. 0.48 (0.37-0.61); p&lt;0.05 vs. 0.84 (0.64-1.10) vs. 0.48 (0.35-0.65); p&lt;0.05</p> <p>Rooms equipped with personal facilities: 1.00 (0.74-1.35) vs. 0.54 (0.42-0.69); p&lt;0.05 vs. 0.64</p>	<p>In past choices patients relied primarily on hospital reputation. Participants say they would use more information in future decisions, but previous experience is the most frequently mentioned (25.3%) and the most frequently identified quality information for future use are 'experience with procedure in the presence of cancer' (9.2%) and 'percentage of patients with textbook outcomes (5.3%).. Younger and more educated people are more likely to say they will use quality in the future, but no differences were found by gender. In choosing formats, 36.5% preferred stars and 50.5% preferred an overall hospital score as well as specific indicators.</p>	Not reported

Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
68	Dijs-Elsinga, 2010 (68) <i>can't</i>				<p>(0.49–0.84) ; <math>p &lt; 0.05</math> vs. 0.35 (0.25–0.48); <math>p &lt; 0.05</math></p> <p>Already treated in that hospital: not significant for any comparison</p> <p>Information about general facilities: 0.98 (0.70–1.38) vs. 0.41 (0.31–0.55); <math>p &lt; 0.05</math> vs. 0.58 (0.43–0.78); <math>p &lt; 0.05</math> vs. 0.28 (0.19–0.42); <math>p &lt; 0.05</math></p> <p>Waiting time for surgery: 1.52 (1.03–2.24); <math>p &lt; 0.05</math> vs. 1.14 (0.84–1.56) vs. 1.05 (0.74–1.48) vs. 1.14 (0.78–1.64)</p> <p>Information about hospital size: 0.98 (0.62–1.56) vs. 1.09 (0.73–1.62) vs. 1.06 (0.67–1.68) vs. 1.64 (1.03–2.61); <math>p &lt; 0.05</math></p> <p>Percent of patients with pain measurement: 2.78 (0.74–10.38) vs. 3.05 (0.95–9.77) vs. 0.33 (0.12–0.94); <math>p &lt; 0.05</math> vs. 0.42 (0.14–1.27)</p> <p>General hospital information to be used in future to make decision about hospitals: OR (95% CI)</p> <p>Hospital has good reputation: not significant for any comparison</p> <p>Previous experience with that hospital: 0.84 (0.60–1.18) vs. 0.90 (0.68–1.19) vs. 1.27 (0.94–1.73) vs. 1.69 (1.20–2.40); <math>p &lt; 0.05</math></p> <p>Hospital atmosphere is friendly: not significant difference for any comparison</p> <p>Information given during stay is sufficient and comprehensible: 0.90 (0.65–1.23) vs. 1.16 (0.88–1.52) vs. 1.60 (1.19–2.15); <math>p &lt; 0.05</math> vs. 1.46 (1.06–2.03); <math>p &lt; 0.05</math></p> <p>Easy access by public/own transportation: 1.12 (0.84–1.48) vs. 0.68 (0.53–0.87); <math>p &lt; 0.05</math> vs. 1.10 (0.84–1.44) vs. 1.05 (0.78–1.41)</p> <p>Parking near hospital: 1.09 (0.82–1.45) vs. 0.66 (0.51–0.84); <math>p &lt; 0.05</math> vs. 1.08 (0.83–1.42) vs. 0.75 (0.56–1.01)</p> <p>Hospital rooms are equipped with personal facilities: 1.16 (0.87–1.54) vs. 0.72 (0.56–0.92); <math>p &lt; 0.05</math> vs. 0.96 (0.73–1.25) vs. 0.68 (0.50–0.91); <math>p &lt; 0.05</math></p> <p>Distance to the hospital: not significant for any comparison</p> <p>Waiting time for surgery: 0.97 (0.73–1.29) vs. 1.33 (1.04–1.70); <math>p &lt; 0.05</math> vs. 1.54 (1.17–2.01); <math>p &lt; 0.05</math> vs. 1.88 (1.40–2.54); <math>p &lt; 0.05</math></p>		



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68	Dijs-Elsinga, 2010 (68) <i>can't</i>				Information about general facilities: 1.24 (0.89–1.72) vs. 0.47 (0.35–0.62); $p<0.05$ vs. 0.76 (0.57–1.01) vs. 0.40 (0.28–0.57); $p<0.05$ Information about hospital size: not significant for any comparison Percentage of patients with pain measurement: not significant for any comparison Number of canceled surgeries: 0.98 (0.64–1.49) vs. 1.63 (1.11–2.40); $p<0.05$ vs. 0.95 (0.62–1.46) vs. 1.69 (1.10–2.59); $p<0.05$		
49	Fasolo, 2010		In response to the open ended probe about what is important the top three responses were 1. quality of doctors, 2. availability of specialists, and 3. distance to hospital. When given cards with indicators, the three selected were waiting times, cleanliness and treatment with respect and dignity. After discussion as a group these changed to waiting times, survival rate and risk of MFSA infection. When selecting from report card the most important were 1. waiting times, 2. risk of MSRA infection and 3. overall quality of service.	Order the indicators were presented in the report card mattered. Waiting time and proportion of people reporting improvement were switched between 1st and 7th on the report card and when waiting time was first it was rated as more important.  Participants used indicators provided on report card even if they said they were not important at earlier stage and did not consider some they said were important. The looked for patterns across the indicators and preferred a summary score, particularly participants who were older and less literate.  Participants said they understood the indicators, but when asked to explain them, they often gave incorrect definitions.  Most wanted some type of color or graphic label, but multiple labels were confusing. Missing data was considered suspicious.		The finding are that preferences can be constructed or influenced by discussion or additional information. Order (more attention paid to first) and layout matter. And clear labels, consistent format and summative measure are likely to reduce cognitive burden.	conflicts and funding: none declared
1318	Geraedts, 2007	22/29 indicators were understandable for more than 40 patients. Only 5 were understood by the entire group of patients. In the physician group, one indicator was suitable for all of the interviewed doctors and only 11/29 indicators were suitable for more than 80% of them. Four indicators were judged as not understandable by more than half of the patients compared to seven indicators deemed not suitable in the group of physicians.  NOTE: Additional data available in Table 2 that I could not access. See first sentence of results section.					

Refid	Author, Year	10. KQ3:Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
3012	Ginsburg, 2003	35% of respondents were not at all familiar with report or results	none	Data characteristics including complexity, relevance and quality explain 28.7% ( $p < .01$ ) of the perceived usefulness of the performance data	Organizational variables explain 40% ( $p < .01$ ) of the perceived usefulness of the performance data. Improvement culture is positively associated with perceived usefulness and interacts with data quality, such that in very strong improvement cultures, the data is perceived as useful even when it is less relevant.	Over 1/3 of managers are not familiar with the report. Both data characteristics and improvement culture are related as expected to perceived usefulness. However at the extreme, the relationship changes.	none stated
5524	Gross 1989		<p>I would use the government mortality data to judge hospital quality  Yes: Champus - 67, General - 59  No: Champus - 30, General - 31  Don't know: Champus - 3, General - 10</p> <p>Assuming your physician does not participate at the hospital you feel has the highest quality in town, how likely are you to change physicians in order to use that hospital?  Very likely: Champus - 25, General - 27  Somewhat likely: Champus - 33, General - 28  Not very likely: Champus - 21, General - 25  Unlikely: Champus - 18, General - 17  Don't know: Champus - 3, General - 5</p> <p>Please assume that you were scheduled for surgery and your physician gave you the choice of two hospitals. Assume these hospitals are very similar and there is no price difference.  How likely are you to use the government statistics to help make your decision?  Very likely: Champus - 34, General - 30  Somewhat likely: Champus - 39, General - 28  Not very likely: Champus - 12, General - 22  Unlikely: Champus - 14, General - 16  Don't know: Champus - 1, General - 5</p> <p>If the hospital that you currently use is reported to have a high mortality rate, would you discontinue using that hospital  Yes: Champus - 55, General - 55  No: Champus - 41, General - 41  Don't know: Champus - 4 General - 4</p>			As hypothesized, in the two years during which mortality data had been available, consumers continued to rely on personal assessments of hospital care as a means of judging quality. A significant majority of the individual consumers questioned were unaware of published government mortality data or reports such as the Consumers' Guide to Hospitals (Center for the Study of Services 1988).	Humana Inc.

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787	Guru 2009		<p>Views of cardiac surgeons in Ontario vs Pennsylvania regarding reporting of outcomes for coronary artery bypass graft surgery: Ontario vs. Pennsylvania: %</p> <p>Do you support the public release of hospital-specific outcomes? (Yes): 51 vs. NR</p> <p>Do you support the public release of surgeon-specific outcomes? (Yes): 26 vs. NR</p> <p>Do you find reporting of risk-adjusted in-hospital mortality rates useful in monitoring quality of care? (useful): 73 vs. 86</p> <p>How important are risk-adjusted mortality rates in assessing the relative surgeon performance? (important): 83 vs. 32</p> <p>Do you think that public reporting is important in influencing referral patterns of cardiologists? (important): 84 vs. 13</p> <p>Do you think that public reporting is important in influencing patients choosing a cardiac surgeon? (important): 80 vs. NR</p> <p>Do you slot high-risk patients to those surgeons who have better results or are more senior? (often): 66 vs. NR</p> <p>What responses have you made in your practice in response to the institutional report cards?</p> <p>Improved record keeping: 17 vs. NR</p> <p>Standing orders/care maps: 10 vs. NR</p> <p>Created a database: 8 vs. NR</p> <p>Audited charts to ensure evidence-based practices: 6 vs. NR</p> <p>Revised standing orders: 6 vs. NR</p>			<p>In general, cardiac surgeons in Ontario had higher levels of support for some aspects of public reporting compared to those from Pennsylvania. They were also more likely to believe that the report influence referral and patient choice Author's summary: We found a generally higher level of support for some aspects of public reporting than was reported previously in Pennsylvania.</p>	Cardiac Care Network

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4539	Hannan, et al, 1997	<p>Responses to Questionnaire:</p> <p>Do you routinely discuss the information in the cardiac report with your patients: Yes (89) 22%; No 310 (78%)</p> <p>For the following: Very much (%); Somewhat(%); Not at all(%)</p> <p>Do you feel the information is accurate: 27(7%); 235(60%); 130(33%)</p> <p>How much do you feel that the report: Is too technical: 11(3%); 84(23%); 272(74%)</p> <p>Has too many graphs: 8(2%); 86(23%); 274(75%)</p> <p>Has too many charts: 8(2%); 88(24%); 270(74%)</p> <p>Is misleading in interpretation of records of physician and hospital: 139(37%); 175(46%); 63(17%)</p> <p>how often has the information affected your choice when referring your patients to cardiac surgeons: 25(6%); 129(32%); 248(62%)</p> <p>For the following: Not at all useful; Somewhat useful; Extremely useful; Average (scale of 1-5)</p> <p>How useful do you consider this information in making referral decisions for patients needing CABG surgery: 215(53%); 127(31%); 65(16%); 2.40</p>	Not Studied	Not Studied	Not Studied	<p>Primary results regarding how cardiologists feel about the NY Cardiac Report show that a large majority (93%) have at least some reservations about the accuracy of the data in the report. As far as formatting, they appear to be comfortable with the report, but a large portion (83%) are at least somewhat hesitant about the reports being misleading. Moreover, only 22% discuss the information with their patients, and most (62%) claim that the information has not affected their choices when referring patients at all. Finally, more than half say they do not consider the information useful at all when making referral decisions for patients needing CABG surgery, and only 16% claim it to be extremely useful. In sum, the cardiologists do not use the information very frequently and feel that the data may be inaccurate and the interpretation misleading.</p>	Partial support from the Agency for Health Care Policy and Research of the U.S. Department of Health and Human Services

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1414	Hibbard, 2007	None	<p>Health Literacy vs. Numeracy vs. Activation</p> <p>Correlations between demographics</p> <p>Age: .03 vs. .02 vs. .09</p> <p>Income: .03 vs. .11 vs. .12; p&lt;0.05</p> <p>Self-rated health: .08 vs. .24; p&lt;0.001 vs. .38; p&lt;0.001</p> <p>Education: .28; p&lt;0.001 vs. .45; p&lt;0.001 vs. .23; p&lt;0.001</p> <p>SF8 Physical: .09 vs. .26; p&lt;0.001 vs. .23; p&lt;0.001</p> <p>SF8 Mental: .03 vs. .18; p&lt;0.01 vs. .26; p&lt;0.001</p> <p>Gender: .13; p&lt;0.05 vs. .08 vs. .11</p> <p>Health literacy : 1.0 vs. .51; p&lt;0.001 vs. .11</p> <p>Numeracy: .51; p&lt;0.001 vs. 1.0 vs. .16; p&lt;0.01</p> <p>Comprehension vs. quality choice</p> <p>Correlations between predictor variables</p> <p>Health literacy: .59; p&lt;0.001 vs. .30; p&lt;0.001</p> <p>Numeracy: .66; p&lt;0.001 vs. .35; p&lt;0.001</p> <p>Activation: .20; p&lt;0.001 vs. .25; p&lt;0.001</p> <p>Comprehension: 1.0 vs. .51; p&lt;0.001</p> <p>Low patient activation vs. high patient activation</p> <p>Proportion of correct response on comprehension scale</p> <p>Low health literacy: 71.9% vs. 81.6%; p&lt;0.05</p> <p>High health literacy: 86.6% vs. 88.2%; NS</p> <p>Low numeracy: 67.7% vs. 76.3%; p&lt;0.05</p> <p>High numeracy: 90.2% vs. 90.7%; NS</p> <p>Proportion of high quality choices</p> <p>Low health literacy: 51.3% vs. 70.0%; p&lt;0.001</p> <p>High health literacy: 68.5% vs. 75.3%; p&lt;0.05</p> <p>Low numeracy: 53.0% vs. 66.8%; p&lt;0.05</p> <p>High numeracy: 66.3% vs. 77.0%; p&lt;0.001</p>	None	None	<p>People who are move activated better comprehend and use comparative information even when they have lower skill levels. When trade-offs are required among characteristics of hospitals, people with higher levels of activation are more likely to trade other characteristics for higher quality hospitals.</p>	Blue Cross Blue Shield

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782	Kang, 2009	<p>Over 50% of the respondents expressed their intention to use the hospital performance information; 53% to switch hospitals based on performance data; 54% to retain hospital performance data; and 75% to recommend hospitals with high performance to relatives and friends.</p> <p>Average self-assessed understanding of the 18 evaluation criteria=3.15 (Fair=3). Highest understanding was for: Patient rights and convenience (3.34), nutrition (3.31), facility and safety management (3.30), and quality improvement (3.26). Lowest understanding: Maternal and infant care (2.92), intensive care unit (2.95), radiation test (2.9), and medical care systems: 3.10</p> <p>For the respondents who agreed what the effectiveness of HEP in improving the quality of national health care, the likelihood of using the performance information was significantly increased by an odds ratio (OR) of 1.684 (95%CI=1.143-2.483) for recommending hospitals with good performance; OR=1.630 for switching hospitals with good performance. OR=2.297 for keeping performance data for future use.</p>				<p>Author's summary: More than half of the respondents expressed their intention to use the hospital performance information generated by the new HEP system.</p>	NR

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6672	Khang, 2008	Not Studied	Not Studied	Not Studied	<p>OF 505 respondents, only 228 were aware of the report.</p> <p>Odds ratios of awareness by age and parity (95% CI):</p> <p>Age:</p> <p>20-24: 1.00 (reference)</p> <p>25-29: 2.8 (1.39-5.61)</p> <p>30-34: 2.46 (1.11-5.46)</p> <p>35-39: 2.98 (1.30-6.83)</p> <p>40-44: 2.28 (.96-5.44)</p> <p>45-49: 1.49 (.61-3.66)</p> <p>Parity:</p> <p>none: 1.00 (reference)</p> <p>One: 2.00 (1.01-3.93)</p> <p>Two: 1.05 (.53-2.06)</p> <p>Three or more: 1.06 (.45-2.50)</p> <p>Adjusting for age and parity, odds ratios found that education [compared to middle school or less - High school: 2.08 (1.05-4.11); College or higher: 3.53 (1.67-7.46)] had an affect on awareness as did monthly income of &gt;2001 USD [1.77 OR (1.07-2.91) compared to &lt;1200 USD], and how frequently respondents watch or read health related media:</p> <p>Rarely—reference; sometimes: 2.13(1.05-4.33); very often: 4.80 (2.31-10.00); Always: 4.27 (1.54-11.79)</p> <p>Aspects that were not related to awareness were Occupation, Marital status, Religion, and Residence (urbanicity)</p>	Younger women, those with higher education and those who have an interest in health related media were most likely to be aware of the Cesarean reports.	None reported
1434	Laschober 2007	<p>Senior executives Responses:</p> <p>More Frequent Internal Requests for Information about Quality Performance 85.8</p> <p>More Discussion of Quality Performance in Hospital's Strategic Planning Process 93.6</p> <p>Heightened Attention to Improving Quality by a Larger Group of Hospital Staff 96.5</p>				Authors suggest that public reporting may be substantially impacting hospital QI and reporting efforts. This includes Leadership attention to QI efforts.	Mathematical Policy Research

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2853	Longo and Everett, 2003	Not Studied	<p>Overall Perspectives on Consumer Reports: An effective means of comparing different hospitals and/or healthcare providers: 59.9% Useful resource to have for healthcare decisionmaking: 55.2% "Nice-to-know" info, but does not make a difference in actions: 34.1% Hospital advertising or public relations: 30.2% A waster of time: 8.4%</p> <p>Based on Information in report, how likely to: [by %, Very likely; Somewhat likely; Not too likely; Not likely at all; Don't know] May change doctors or hospitals: 4.1; 8.1; 30.4; 47.4; 10.1 May use info to make decision re: medical procedure at our medical center: 21.9; 31.9; 18.1; 14.7; 13.4 Keep this report for future reference: 24.6; 22.2; 19.6; 21.3; 12.3</p> <p>Highest ranking most important and/or helpful sections of report by presence of chronic Disease in Respondent and/or Family Member: [Disease Present: Section most helpful; % Respondents with disease] Strokes: Heart Disease; 74.6 and Strokes; 64.4 Diabetes: Diabetes; 74.4 Breast Cancer: Breast Cancer; 68.9 Other Cancer: Heart Disease; 54.7 and Other Cancer: 49.3 No Chronic Disease: Comparisons to National Average; 50.4 Heart Disease: Heart Disease; 79.8 Alzheimer's: Heart Disease: 52.6 (no Alzheimer's section in report) High Blood Pressure: Heart Disease: 60.8% Overall: Heart Disease; 50.5%</p>	Not Studied	Not Studied	<p>Overall, large percentages of respondents said that they believed the reports were effective in comparing different hospitals and health care providers. Just over a third said that it didn't really make a difference to them, and 8.4% said it was really just a waste of time. Almost half said that they were not at all likely to change doctors or hospitals due to the reports, but slightly over half said they were at least somewhat likely to use the information to decide whether or not to have certain medical procedures there. Respondents were more likely to say that the most interesting and/or helpful part of the report were sections pertaining to chronic illnesses that they or their family members had</p>	<p>Missouri Department of Health; Department of Family and Community Medicine, University of Missouri-Columbia School of Medicine; No COIs listed</p>
4877	Luce 1996	<p>Use of HCFA Mortality Data and OSHPD RAMO data:</p> <p>Hospital Review of Data Release: Yes - 16, No - 1 Hospital Medical Record Review for Individual patients: Yes - 7, No - 10 Values of data release to hospitals (scale 0-10): Median - 3 (0-10) Quality Improvement activities initiated - 3</p>				<p>study showed that public hospitals in California made generally little use of the RAMO data provided by OSHPD in the first year after distribution of the data to the hospitals or in the seven months following their public release.</p>	<p>Pew Charitable Trusts</p>



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2912	Magee, 2003		Awareness of ratings of local trust was very low. Government ratings were mistrusted and the format of the commercial information was preferred. People did not use the information because they did not feel they really had a choice and some did not like the idea of shopping around--they expect high quality everywhere. Despite this there was general consensus that the information should be public, that people had the right to know.			Early response (pre wide spread use of ratings on Health Department web site) find little use or confidence in measure and a preference for commercially produced overviews.	Commission for Health Improvement
2938	Mannion, 2003	<p>Data have raised awareness of issues but are not integrated into clinical governance. Reports were not well disseminated in the hospital and many staff were unaware of them. Other senior staff did not view them as credible. Some staff preferred process indicators as they felt these were more amenable to improvement.</p> <p>The Health Boards only used the reports when they had an outlier in their area. The were discussed at the board level but not disseminated.</p> <p>78% of GPS knew about the data but only 46% recalled seeing the most recent report. While they used the data they also had other sources: Types of published information used by Scottish GPs to make assessments of local hospital services Yes % n No % n Waiting times data 73 51 27 19 Other national published data 1 1 99 68 Reports from professional bodies 24 17 76 54 CRAG indicators 23 16 77 55 Local audit reports 42 30 58 41 Trust annual reports 13 9 87 62 Other 8 5 92 59</p>	Local Health Councils reported no enquires about the CRAG indicators and report that consumers use other sources, primarily family, GPS, and past experience. They report that the CRAG receives limited publicity.			Overall the indicators were rarely used bu consumers or professionals. The reasons for this may be limited dissemination, lack of credibility and lack of formal incentives.	UK Department of Health
11682	Mannion, 2005	<p>Star ratings were not seen as adequately representing their organizations, not relevant given local issues, based on inaccurate data, and subject to gaming. Beneficial responses included providing a basis on which to align local performance with national targets and develop new reporting systems.</p>				Reaction is negative, but some use of reports is in line with the intentions. Negative consequences are often cited by staff.	No funding or conflict status reported

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568	Mazor, 2009		Responses and reactions to reporting Most people were not aware of HCAs and distressed to know they occurred Public reporting about this one thing was seen as unlikely to affect hospital choice as people use other information and said other factors were more important.	Recommendations on content Provide an introduction to the topic Provide information on prevention Present only the most important data Present cases per X, not absolute number of cases Indicate the time period covered by the report Indicate whether performance is changing over time Help consumers integrate information from multiple indicators Provide a summary score or brief text to aid interpretation  Recommendations on format Use numbers rather than symbols to convey numeric or statistical information Place definitions or explanations of indicators near data Order hospitals (or other reporting units) from best to worst Label whether a high or low number is better for each indicator Omit confidence intervals and details of risk adjustment (or report in separate technical section) Avoid abbreviations Use color sparingly to capture attention Keep print reports brief		Public reporting of HCI is becoming more common, but consumers seem unaware of this issue and when made aware are unlikely to choose a hospital based on this.	none listed
6609	Mazor, 2009		Reporting on HAI may have an impact on choice but the other factors including MD recommendations, prior experience and insurance are likely to be more important.  Among the indicators reported people are more influenced by the safe practices score than infection or mortality rate.	Reports were generally easy to understand (85-90% selecting 4 or 5 where 5 is very easy). The section of the report that explained the risk adjustment and confidence intervals was the more difficult. Consistency, presentation type or presence of confidence intervals did not affect understandability.		Most consumers seem able to understand information presented on HAIs presented in a report card format; however these are unlikely to be the major influence on hospital choice.	Massachusetts Department of Health
3000	Mehrotra, 2003	Most report cards included in-hospital mortality and length of stay, either overall or by diagnosis. Report cards were considered a success if they prompted or increased QI, and by this definition, most were not.		Barrier to report card use Ambiguity of goals Conflicts over how to measure quality Conflicts over the utility of public release No economic incentives Lack of collaborative planning		The perceived impact of the reports was variable with some viewed as successful and other have less impact. The major barriers were disagreements among the business coalitions who produced the reports and the hospitals.	Robert Wood Johnson Foundation
9936	Merle, 2009		77% of respondents were interested in ICALIN. ICALIN was ranked 6th is a ranking of reasons to choose a hospital. If a hospital had a low ICALIN score 24.1% said they would refuse admission and 54.9% would seek advice from their GP, 12.1 % would be concerned but would accept admission.			Authors conclude this type of report card could have an effect on choice of hospital, but the patients rely on their GP to interpret this information.	stated: no funding, no conflict

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50	Moser, 2010		Decision making theme: report card information was interpreted in the context of personal experience. Some people added scores while other used specific exclusion criteria including not knowing the hospital from personal experience or stories from family and friends. The report card was perceived as a supplementary source of information and reported that it increased their awareness of quality of care.	The reports were viewed as not specific enough: too vague, too general and not enough difference among hospitals. They also wanted information not included in the report card.  Participants wanted to understand what was behind the ratings and worried they would be making decisions based on outdated information.		Decisions are individual and context specific and people did not have a consistent strategy. The report card is not the primary source of information for the choice.	Netherlands Organization for Health Research and Development
6054	Peters, 2007			1. Study one found that people presented with ordered information about quality only as opposed unordered information that included a mixture of quality and other information, were more likely to pick the higher quality hospital. 2. Different presentation formats did not have a significant impact on comprehension, but more people chose the lower death rate hospital when this information was presented in a way that was easier to evaluate. 3. Comprehension and choices improved when higher was always better in the presentation of ratings.		The overall conclusion is that less is more when presenting health information. People with lower numeracy had better comprehension and made better choices when presented with simplified formats.	Blue Cross Blue Shield Association and NSF
6739	Pham, 2006	Hospitals are involved in multiple reporting programs (mean 3.3; range 1 to 7) that vary according to sponsorship, program type, mandatory versus voluntary, incentives, quality improvement support and inclusion of clinical measures. Hospital Participation In Quality-Reporting Programs, By Program Characteristics, 2004–05 Program characteristic Number of hospitals participating  Sponsorship National public (CMS, JCAHO, Premier) 36 National private (IHI, Leapfrog, NQF) 26 Local public (state, QIO) 19 Local private (health plans, purchasers) 17 Local/regional consortia (academic) 11 Professional societies (ACC, STS) 12 Other 4				Hospitals engaged in more reporting programs do not seem to differ from those involved in fewer. 38 different programs show that reporting is pervasive, although their impact on hospital operations varied. Better coordination would reduce burden and could increase impact.	Robert Wood Johnson Foundation Center for Studying Health System Change

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6739	Pham, 2006 <i>con't</i>	<p>Program type</p> <p>Public reporting using primary data 36</p> <p>Private benchmarking of primary data 20</p> <p>Sole use of secondary data 7</p> <p>Programs involving quality improvement support (IHI, ACS, STS, ADHERE, VHA, QIO) 21</p> <p>Programs were not perceived as influencing patient choice, but they were credited with improving physicians' attitudes toward quality measurement and improvement.</p> <p>Program focus on a limited number of objectives was believed to shift attention and focus from other areas, but others reported there was spillover.</p> <p>IT was view as a factor in the costs associated with reporting</p>					
1992	Putnam, 2006			<p>For AMI: Over half the indicators (29) presented were rated as useful and credible. 17 were rated reasonable in principle, needing caution in interpretation. Only 1 was considered unacceptable (length of stay in ER).</p> <p>For CHF: 18 useful as it; 14 reasonable in principle, and 2 unacceptable</p>	<p>Physicians felt some measures are influenced by system and patient factors outside their control such as physician shortages that may make follow-up difficult or fragmentation of care that make it hard to coordinate or assign responsibility or patient preferences or resistance to taking medications.</p>	<p>The quality indicators are generally acceptable to physicians, though they voiced the opinion that they need to be interpreted in terms of the local context and patient factors.</p>	<p>Canadian Institutes for Health Research and the Heart and Stroke Foundation of Canada</p>

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4479	Rainwater, 1998	<p>~3/4 of respondents found at least some aspect of the CHOP report useful, most frequently, as a means for benchmarking performance. It was also useful in improving and educating physicians about importance of coding.</p> <p>Regarding the least useful aspects, most common answer was that the report was not timely and the data did not reflect current practices. Other complaints included: use of outcomes data without process of care info; poorly standardized coding, excessive complexity and technical detail, attribution of deaths after transfer, inclusion of superfluous information.</p> <p>Most respondents disseminated report within hospital</p> <p>~2/3 of respondents said the report did not lead to any specific changes.</p>	Not Studied	Not Studied	Not Studied	<p>Both NY and CA say report cards are distributed. Leaders at high mortality hospitals were especially critical. Recent hospital report cards were rated better than pioneering federal efforts. A report based on clinical data was rated better, understood better, and disseminated more often to key staff than one that was based on administrative data.</p> <p>Barriers to constructive use of outcomes data persist, especially at high mortality hospitals.</p>	U.S. Agency for Health Care Policy and Research; No COIs
4479	Rainwater, 1998 <i>con't</i>	<p>~1/2 made specific suggestions re: improvements that could be made: need for more timely data, suggested using easier to understand presentation with better graphics, it should be shorter. Others wanted to know what process-of-care factors correlated with better-than-expected outcomes.</p> <p>Regarding release to public, almost all said it should be released but with caveats, saying it was too complex and overly detailed for general use and that the measures should be more widely accepted and validated.</p>					
2869	Rainwater, 2003		The top three factors states as important were accreditation, location, and price. Ratings of the importance of specific quality indicators and well as groups of indicators averages 3.03 to 3.67. 70% reported viewing at least one public report. 33% reported that plans conducted their own internal studies of comparative hospital quality.			There are high levels of awareness and interest in public reports, but little evidence that these influence choices for contracts.	AHRQ

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843	Reeves, 2008	<p>Barriers to using survey results</p> <p>Data were not specific enough to wards, departments or specialties</p> <p>Lack of time and resources</p> <p>Not knowing what to do about the survey results</p> <p>Lack of statistical expertise</p> <p>Facilitators for using survey results</p> <p>Survey results made an important contribution to the organization's performance ratings</p> <p>A patient-centered organizational culture</p> <p>Detailed and clear benchmark information</p> <p>Repetition of the same surveys, facilitating longitudinal comparisons</p>		<p>Recommendations for improving patient survey programs</p> <p>Repeat the same surveys at regular intervals</p> <p>Run regular workshops to facilitate networking and educate survey leads</p> <p>Disseminate information about the basic statistics relevant to patient surveys</p> <p>Gather data on smaller units and/or encourage organizations to analyze their existing results by smaller units</p> <p>Give patient surveys prominence in performance-management systems</p> <p>Continue to publish benchmark charts in a "traffic light" format</p> <p>Ensure that results are published quickly after completion of surveys</p> <p>Ensure that a section for patient comments is included in questionnaires</p> <p>Consider collecting patient survey data at more regular</p>		<p>General responses to the surveys were favorable. The most common barrier to using the survey is that the finding were not specific enough to units where change could happen</p>	Health and Social Care Information Center

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2095	Richard et al, 2005			<p>Four Major Themes Emerged: Overall Views, Purpose, Content and Dissemination:</p> <p>Overall Views: Nearly all were positive about cardiac reports. Some thought it best to measure cardiac units and institutions as they work as teams. Some thought that report cards would help improve quality of care. ----</p> <p>Purpose: Should be used to improve cardiac care and could be used to track quality of care over time, provide feedback to practitioners, and develop strategies to improve care and identify barriers to change. Report cards are also a way of evaluating and standardizing care at both physician and institutional levels. Majority said they would use cardiac report cards for informed decisionmaking; some did not comment about using them, but none said that they would not use the report cards. ----</p> <p>Content: Majority wanted feedback from other cardiac patients. Also wanted the following categories to be included: Patient Experience: Patient involvement in care, Opportunity for patient interaction, Continuity of Care, Follow-up, Communication, Patient Narratives; Access to Care: Distance, Waiting times Physicians: Education, Experience, Number of procedures performed, medical outcomes, Average time spent with patients, # of reported medical errors; Hospitals: Average length of stay, Physician:Patient and Nurse:Patient ratios Procedures conducted, Diagnostic tests available, Rehab services, Research interest, Availability of beds Regions: Comparison with other institutions w/in same region, Physician:Patient ratio ----</p> <p>Dissemination: Participants wanted reports to be brief and understandable. Some thought a ranking would be inappropriate. They listed a number of potentially effective ways of releasing data: the Internet, newspapers, magazines, medical journals, telephone requests, e-mails, television, radio, mail, posters, government offices, libraries, pharmacies, waiting rooms and patient-focused foundations. They also felt family physicians and cardiologist played an important role in dissemination.</p>		<p>Four emergent themes arose: overall views, purpose, content and dissemination. All but one respondent had positive views about cardiac report cards.</p>	<p>The Heart and Stroke Foundation of Canada; The Canadian Institutes for Health Research Interdisciplinary Health Research Team Program to the Canadian Cardiovascular Outcomes Research Team.</p>

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4121	Romano, 1999	<p>Mean score of Respondent Rating of RAMR (measured through scale of 0=poor, 1=fair, 2=good, 3=very good, 4=Excellent): [CA; NY; HCFA]</p> <p>Usefulness in improving hospital quality: 1.1; 1.9; 0.4  Accuracy in describing hospital performance: 1.4; 2.0; 0.7  Completeness of case-mix adjustment model: 1.6; 1.6; 0.6  Ease of interpretation: 1.7; 2.5; 0.9  Usefulness to consumers: .9; 1.3; 0.2  Manner of release to hospital and public: 1.5; 1.7; 1.0  Overall mean score: 1.4; 1.8; 0.6</p> <p>Mean Score of Perceived Usefulness of RAMR Reports in CA and NY (4 Indicators: 0= All respondents disagreed with all statements, 4= All respondents agreed with all statements; Statements of usefulness: a)Improving quality of care, b)Improving quality of coding (NA in CA), c) Negotiating with health plans, d)Marketing and Public Relations):</p> <p>CA (n=2,49): 1.9  NY (n=27): 2.8</p>					AHRQ
4366	Rosenthal, 1998	<p>Descriptive reports:  UHC: In response to 1994 CHQC report indicating LOS of patients undergoing CABG during Jan through June 1993 was longer than predicted (actual mean: 11.1 days, predicted: 10.2 days), developed and implemented care pathways for both intra-operative care and ICU stays.</p> <p>LakeEast: Established institutional targets for overall C-section rate and VBAC success rate. Also developed peer review of management practices, development of clinical protocols to improve the management of labor and analgesia, and practitioner and patient education.</p> <p>Parma: Developed explicit and attainable targets for C-section rates, practice guidelines, peer review, physician feedback, and practitioner and patient education.</p> <p>Allen: Developed interdisciplinary working group to investigate and standardize care for pneumonia. Developed a critical pathway for managing pneumonia.</p>	NR	NR	NR	Author's summary: Common to all case studies was the creation of interdisciplinary work groups, and undertook detailed review of current clinical practices.	NR



Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
4883	Schneider and Epstein, 1996	<p>Aware of Cardiac Guide: Cardiologists: 82% Surgeons: 100%</p> <p>Views on Importance of Outcomes and the Consumer Guide in Assessing the Quality of a Cardiac Surgeon's Performance: [#,(%) for Cardiologists; #,(%)for Cardiac Surgeons]</p> <p>Importance of risk-adjusted mortality***: Minimally or not important: 11(5); 8(14) Moderately Important: 32(12); 15(26) Very or extremely important: 227(84); 35(60)</p> <p>Importance of clinical outcomes other than mortality**:: Minimally or not important: 3(1); 3(5) Moderately important: 31(12); 12(21) Very or extremely important: 236(87); 423(74)</p> <p>Importance of Consumer Guide Ratings: Minimally or not important: 158(70); 39(68) Moderately important: 49(22); 12(21) Very or extremely important: 20(9); 6(11)</p> <p>Influence of Consumer Guide ratings on referrals (only cardiologists): none: 1240(62) Minimal: 57(25) Moderate: 25(11) Substantial: 5(2)</p> <p>Percentage of patients with whom respondent discussed Consumer Guide in past year: 0: 149(66); 33(57) 1-10: 54(24); 22(38) &gt;10: 24(11); 3(5)</p> <hr/> <p>Limitations of the Consumer Guide Rated by Respondents as Very or Extremely Important: [#,(%) for Cardiologists; #,(%)for Cardiac Surgeons]</p> <p>Important factors other than mortality rates not included: 171(78); 45(78) Risk-adjustment methods inadequate to compare surgeons fairly: 169(77); 49(85) Mortality rates are an incomplete indicator of surgeon's quality: 162(74); 49(85)</p>	Not Studied	Not Studied	Not Studied	<p>All cardiac surgeons were aware of the report and most of the cardiologists were. Overall, both groups thought there were some limitations to the report, but the biggest impact seemed to be in access to care for highest risk patients; 63% of surgeons said that they were less willing or much less willing to operate. None were more willing. Of the cardiologists, a majority (59%) said it was at least somewhat more difficult to find surgeons willing to operate on their most severe cases. Of note, 10% stated it was easier to find surgeons willing to operate. Only 30% of cardiologists said the Consumer Guide had a moderate to substantial influence on their referrals.</p>	Henry J. Kaiser Family Foundation. No conflicts listed.

Refid	Author, Year	10. KQ3:Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
4883	Schneider and Epstein, 1996 <i>con't</i>	<p>Surgeons and hospitals can manipulate data: 113(52); 33(57)</p> <p>Ratings are based on out-of-date information: 93(43); 20(35)</p> <p>A higher mortality rate is probably due to chance alone: (49(23); 16(28)</p> <p>Few surgeons and hospitals report mortality rates that are higher or lower than expected: 39(18); 11(20)</p> <p>Rating are inaccurate for surgeons with small caseloads: 31(15); 11(20)</p> <p>Differences between two groups</p> <p>***p&lt;.001; **p&lt;.01</p>					

Refid	Author, Year	10. KQ3:Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
4411	Schneider and Epstein, 1998	Not Studied	<p>Awareness, Knowledge and Use of Consumer Guide: [#,(%)]  Aware: 93(20)  Aware before surgery: 56(12)  Heard of it: 37(8)  Seen a copy: 19(4)  Report knowledge of hospital rankings: 18(4)  Information was a major or moderate influence in choice: 11(2)  Report correct rating of hospital: 4(1)</p> <p>Individual Surgeons:  Report knowledge of surgeon or surgical group rating: 7(2)  Information was a major or moderate influence in choice: 4(1)  Report correct rating of surgeon or surgical group: 4(1)  Discussed guide with surgeon or other physician: 6(1)</p> <p>-----</p> <p>Patient Interest in Consumer Information on Cardiac Surgery: [#,(%)]  Interest in obtaining the Consumer Guide:  Don't know: 26(6)  Not at all: 133 (28)  Not very: 51(11)  Somewhat: 106(22)  Very: 158(33)  Willingness to change surgeons:  Don't Know: 78(16)  Definitely would not: 51(11)  Probably would not: 72(15)  Probably would: 127(27)  Definitely would: 146(31)  Willingness to pay, \$:  0: 149(33)  5: 64(14)  10: 80(18)  20: 125(27)  50: 20(4)  100 or more: 18(4)</p> <p>-----</p> <p>Barriers to Use: [#,(%)]  Time &lt;3 days between decision to operate and procedure: 178(38)  Less than enough time to learn about surgeons and hospital: 58(12)  No hospital in a reasonable distance: 157(33)  Distance somewhat or very important in choosing a hospital: 311(66)  Remained in same hospital between decision to operate and operation: 205(43)  Cost affected choice: 8(2)  Managed care or insurance restriction: 19(4)</p>	Not Studied	<p>Characteristics of Individuals Aware of the Consumer Guide before Most Recent Open Heart Procedures: (dichotomous variables)[Odds Ratio; 95% CI]</p> <p>Age:  &lt;65: 2.00; 1.14-3.51*  Sex:  Male: 2.03; .96-4.27  Education:  Some College-Advanced Degree: 2.10; 1.19-3.70*  Income:  &gt;\$30,000: 1.81; .97-3.38  Health Status Prior to Operation:  Fair or Poor: 1.88; 1.06-3.33*  Prior Admission to hospital at which CABG was Performed:  Yes: 1.14; .64-2.01  Hospital Rated Higher-Than-Expected Mortality:  yes: 1.51; .82-2.79  Length of time with heart disease:  ≥1 year: 1.91; 1.05-3.50*  Days Between Decision and Operation:  &lt;3: 1.00; .56-1.77</p> <p>*p&lt;.05</p>	<p>55% of respondents in Pennsylvania having undergone CABG surgery are interested in quality reports, but only 20% of respondents were aware of the Consumer Guide at the time of the survey, and even less, (12%) were aware before surgery. 28% were not at all interested in the report. Only 4 percent had seen a copy of the report. 1/3 were unwilling to pay anything for the report, but 8% said they would pay at least \$50 for it. The largest barrier to use (66%) of the report was that distance was a factor in choice.</p> <p>Educated, younger patients with poorer health and longer heart conditions were the most likely to use the report.</p>	Grant from Henry J. Kaiser Family Foundation; National Research Service Award from Dept of Health and Human Services. No COIs listed.

Refid	Author, Year	10. KQ3:Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
6794	Schwartz, 2005	Not Studied	<p>Positive Responses to Questions Regarding Decisionmaking for Surgery and Reactions to Surgical Performance Data: [% (95% CI) of Respondents]</p> <p>Who made the decision to have your surgery at your hospital?: Mainly your doctor: 31 (27-35) Mainly you or you and your family: 24 (20-28) Both Equally: 41 (37-45) Some else (such as family members, other health professional): 4 (2-6) No answer: 1 (0-2)</p> <p>Did You try to find information that compared your hospital with other hospitals: 11 (8-14)</p> <p>Hospital and Surgeon Reputation: Did you think your hospital had a good reputation: 94 (92-96) If so, did you think your hospital had a good reputation because of: Hospital advertisements you saw: 16 (13-19) What your family or friends said: 31 (28-35) What your doctor said: 64 (60-68) Low number of people who died after surgery: 15 (12-18)</p> <p>Reactions to Performance Data: Medicare is considering publishing a list of best hospitals for different operations. What do you think is the main reason for creating this list: To help patients: 55 (51-59) To save money: 21 (17-25) Another reason: 10 (7-13) Don't know: 7 (5-9) No answer: 13 (10-16)</p> <p>If you needed another operation how likely would you be to use this list: Not likely: 27 (23-31) A little: 21 (17-25) Very likely: 47 (43-51) no answer: 5 (3-7)</p> <p>Where would you prefer to get information about best hospitals for operations from: Only your doctor: 40 (36-44) Only other sources 2 (0-4) Both: 55 (51-59) No answer: 3 (1-5)</p>	Not Studied	Not Studied	<p>Decisions on where to have surgery was largely influenced by doctors and only 24% said that they alone (or with family input) made the decision of where to get surgery. Only 11 percent of the respondents attempted to find comparative hospital information prior to their surgery. In the case of future surgeries, 27% of patients said they would not use a list of best hospitals, but 47% said they would be very likely to use such a list for future surgeries.</p>	<p>AHRQ COIs: JDB is a paid consultant and chair of the expert panel on evidence based hospital referral for the Leapfrog Group</p>

Refid	Author, Year	10. KQ3:Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
2053	Sofaer, 2005		<p>Participants in open discussion raise some topics as important not included in CAHPS, but there were structural and outcome measures that might not be available from a patient survey such as nurse to patient ratio or being discharged too soon..</p> <p>In CAHPS domains patients are most interested in communication, responsiveness to needs and cleanliness.</p> <p>Within domains the most important items were</p> <p>Communication: Doctors' listening carefully; nurses listening carefully</p> <p>Responsiveness to needs: call button answered as soon and possible was important and see as subsuming others/</p> <p>Pain management: participants had difficulties picking one item</p> <p>Avoiding problems with medication: participants had widely different priorities</p> <p>Hospital Room: Cleanliness was most important.</p> <p>Post discharge: most people did not initially view this as the hospital responsibility although this changed as people provided examples.</p>			<p>Compared to experience with Health Plans patients appear able to attribute quality to the hospital and hold them accountable and this corresponds to their interest in quality information. The focus on communication, responsiveness and cleanliness were consist across participants from other backgrounds.</p>	AHRQ and CMS

Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
2982	Tu and Cameron, 2003	<p>Changes in AMI Care Made at Hospitals in Response to Cardiac Atlas (n=48): (%)</p> <p>No Change: 46%</p> <p>Change: 54%</p> <p>Specific Changes of those that made changes, by % (n=26):</p> <p>Overview of thrombolytic use and door-to-needle times: 50</p> <p>Review of medical records of AMI patients: 50</p> <p>Conducted continuing medical education: 38</p> <p>Improved health records coding: 35</p> <p>Introduction of new critical pathways/standing orders: 23</p> <p>Sharing of care maps/best practices with other local hospitals: 23</p> <p>Planning for health care services: 23</p> <p>revision of existing critical pathways/standing orders: 19</p> <p>Budget decisions: 8</p> <p>Reassigning medical staff for AMI patients: 4</p> <p>Respondent Views on the Impact of the Cardiac Atlas, by %:</p> <p>Media report on your hospital's performance (n=50)</p> <p>Yes: 62</p> <p>No: 16</p> <p>Don't know: 22</p>	Not Studied	<p>Limitations of Cardiac Atlas Rated Very or Extremely Important, by %(n=51):</p> <p>Hospital discharge data may be miscoded: 57</p> <p>Risk-adjustment methods are inadequate to compare hospital mortality rates fairly: 43</p> <p>Transferred patients assigned to admitting (first) hospital: 35</p> <p>Lack of information on in-hospital drug use: 35</p> <p>Timeliness of data: 33</p> <p>No data included on drug contraindication: 33</p> <p>Lack of drug use on the non-elderly: 29</p> <p>Few hospitals had morality rates higher or lower than expected: 26</p> <p>Lacked important outcomes (e.g., patient satisfaction): 22</p>	Not Studied	<p>A slight majority (26 vs 22) of surgeons reported that their hospitals made specific changes within a year in response to the publication of the ICES Atlas.</p> <p>Surgeons had some reservations regarding certain limitations, in particular that the actual data used in the report may be miscoded, and therefore inaccurate.</p> <p>A fairly large majority (32 of 49 supported the public release of hospital-specific AMI morality, but a large majority (84% of 50) said the report did not change the number of cardiac patients coming to their hospitals, and 81% of 32 said that no patients spoke with them about the findings during the previous year.</p> <p>The majority of surgeons felt that the media reported on their hospital's performance</p>	Operating grant from the Canadian Institutes for Health Research and a Canada Research Chair in Health Services Research

Refid	Author, Year	10. KQ3: Results	11. KQ4: Results	12. KQ5: Results	13. KQ6: Results	14. Summary	15. Funder of Research/ Report Article
2982	Tu and Cameron, 2003 <i>con't</i>	<p>Content of media coverage of those reporting media coverage (n=31)  AMI mortality rates: 81  AMI procedure rates: 10  AMI secondary prevention rates: 7  Readmission rates: 7  AMI procedure waiting times: 3  Not sure: 10</p> <p>Impact of Atlas on reputation of your hospital (n=47):  No Effect: 79  Improved: 15  Harmed: 6</p> <p>Proportion of cardiac patients going to your hospital after publication (n=50):  Same: 84  Increased: 4  Decreased: 0  Don't know: 12</p> <p>Proportion of patients discussing any Atlas findings within past year (n=32):  0: 81  1-10: 19  &gt;10: 0</p> <p>Do you support the public release of hospital-specific AMI mortality data (n=49):  Yes: 65  No: 35  If no, why not (n=17)?  Public does not understand data: 65  Data are misleading or inaccurate: 41  Potential harm to hospitals' reputation: 29</p>					

## Appendix J. Individual Providers: Quantitative Evidence

### Section A: Contains columns 1 through 10 of all individual provider quantitative studies (J1: J5)

fid	Author Year (QA)	1. Study Purpose and/ or a priori Hypothesis	2. Geographic Location	3. Study Design/ Type	4. Sample Population/ Procedure	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
6596	Bundorf 2009 (Good)	Examines the effects of report cards on consumers' choice of fertility clinics.	USA	One Group, Pre-Post	411 Fertility Clinics performed 127,977 ARTs resulting in 36,760 live births of 49,458 infants.	2 years Pre: 1996 to 1998 5 years Post: 1998 to 2003	Clinic 1 yr lag birth rates and 3 year lagged birth rates. The comparison results in deriving causality	Federally Mandated Report on success rates for fertility clinics maintain by the CDC.	None	None	None
7739	Epstein 2010 (Fair)	Examines the referral patterns to cardiac surgeons to assess whether publication of the May 2002 edition of Pennsylvania's Guide to Coronary Artery Bypass Graft Surgery added information to what referring physicians already knew.	PA and FL	Multiple Groups, Pre-Post	All CABG surgeries occurring in PA and FL, during pre-publication and the post-publication period.	Control: PA vs FL Pre - 2001 to 2002 Intervention: PA vs FL Post - 2002 to 2003  PA n=23655 FL n=38164	Probability of a surgeon being chosen given their rating.	PA Cardiac Report	None	None	None
1185	Glance 2008 (Fair)	To determine if high-risk cardiac surgical patients are less likely to receive care from high-quality surgeons compared with lower-risk patients.	New York	One Group, Post Only	Patients undergoing isolated CABG surgery in NYS who were discharged between 1997 and 1999. N=51750.	Retrospective cohort analysis of patients. low risk patients vs. high risk patients.	Association between surgeon observed to expected mortality ratio and patient predicted mortality	NY CSRS	None	Annually since 1990, Patients and Payers	Cardiac surgeon selection. Consequences of a bad choice are somewhat dire.



fid	Author Year (QA)	1. Study Purpose and/ or a priori Hypothesis	2. Geographic Location	3. Study Design/ Type	4. Sample Population/ Procedure	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
5135	Hannan 1994 (Good)	<p>1) To examine changes in the risk-adjusted CABG outcomes among providers that occurred during 1989-1992 as a function of the risk-adjusted mortality in 1989.</p> <p>2) To examine changes in the volume of patients undergoing CABG as a function of the performance of providers in 1989.</p>	New York	Interrupted Time Series	30 providers (hospitals and surgeons) performing CABG surgeries in New York state	Baseline: Three different groups of ten created using RAMR prior to public release,	<p>Intra-group changes in RAMR: RAMR for each tercile (Group 1= lowest RAMR, Group 2 = middle RAMR, Group 3 = Highest RAMR) in initial period (1989 for hospitals; 1989 to 1990 for surgeons) compared to RAMR for same tercile in 1992.</p> <p>For surgeons: Same breakdown of terciles, but groups 1 and 2 have an N of 32 each, while group 3 has an N of 31</p> <p>Outlier status (high outliers, non-outliers, and low outliers, with low outliers having significantly lower than expected mortality rates)</p> <p>Volume of procedures: tracked using same tercile and outlier groupings.</p>	NY CSRS	None	Better outcomes	Patients can use data to determine quality of surgeons and hospitals that perform CABG operations

fid	Author Year (QA)	1. Study Purpose and/ or a priori Hypothesis	2. Geographic Location	3. Study Design/ Type	4. Sample Population/ Procedure	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
1898	Jha 2006 (Good)	<p>To determine if high or low performance by surgeons or hospitals predicts performance in the period when data are most likely to be used by consumers.</p> <p>To determine whether hospital or surgeon performance affects patient market share.</p> <p>To assess whether surgeon performance is associated with likelihood of ceasing practice.</p>	New York	Time series, post only	Cardiac surgeons in New York	<p>Intervention: Public Release of Cardiac Performance for surgeons (released yearly for three year periods)</p> <p>(For Market Share) Pre: surgeon market share prior to the release of report card</p> <p>Post: surgeon market share one year after release of report card</p> <p>(For Surgeons Quitting) Pre: Performing surgeries prior to release</p> <p>Post: Discontinuing surgeries over the course of two years from release of public data</p> <p>Once identifying surgeons who discontinued practice in NY, attempted to contact them and ask whether they are practicing elsewhere and if they ceased to practice in NY due to the Report Card.</p>	<p>Performance: each hospital's or surgeon's RAMR.</p> <p>Market Share: number of cases of isolated CABG surgeries performed by a given surgeon or hospital in a given time period, divided by the total number of isolated CABG surgeries performed by all surgeons/hospitals in NY during that period.</p> <p>Discontinuation of surgeries: Any surgeon who did not perform a single surgery in a given calendar year assumed to have left the system.</p>	NY CSRS	None	Patients and Surgeons	Surgeon for CABG, a high risk surgery
4377	Mukamel 1998 (Fair)	To test the hypotheses that hospitals and surgeons with better outcomes reported in the NYS Cardiac Surgery Reports experience a relative increase in their market share and prices.	New York	One group, Time Series	Hospitals and surgeons in New York	Compare hospitals over different years (1990 vs. 1991 vs. 1992)	Market Share Price Change	NY CSRS	None	None	None

fid	Author Year (QA)	1. Study Purpose and/ or a priori Hypothesis	2. Geographic Location	3. Study Design/ Type	4. Sample Population/ Procedure	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
3922	Mukamel 2000 (Fair)	<p>To determine if surgeons' quality, as reported in the New York State Cardiac Surgery Reports, plays a role in contracting decisions.</p> <p>A priori null hypotheses: MCOs choose surgeons randomly with respect to:</p> <p>H1. A surgeon's quality as measured by the surgeon's reported RAMR</p> <p>H2. A surgeon's designation in the report card as a low-quality outlier</p> <p>H3. A surgeon's designation in the report card as a high-quality outlier</p> <p>H4. A high procedure volume as defined by the report card (more than 200 procedures in the three preceding years).</p>	New York	One Group, Post Only	All HMOs, IPAs and PPOs licensed to operate in New York State and all cardiac surgeons offering CABG surgery.			NY CSRS	None	None	None
3127	Mukamel 2002 (Fair)	To investigate the role of surgeon's quality in managed care organizations (MCO) contracting choices	New York	One Group, Post Only	Cardiac surgeons in New York State Report	New York state Report, high vs. low quality cardiac surgeons	Contracting with MCO	NY CSRS	None	None	MCO contracting with surgeons/hospitals
8047	Mukamel 2004 (Good)	This study evaluates the effectiveness of quality report cards by examining the impact of the New York State Cardiac Surgery Reports on selection of cardiac surgeons.	New York State	One Group, Pre-Post	All NYS Medicare fee-for-service (FFS) enrollees (age 65 or older) who had CABG procedures during 1991 and 1992	Compare surgeons selection in a period without report cards 1991 and a period with report cards 1992.	<p>Three Ho:</p> <p>1. Prior to NYS reports, selection of surgeons was associated with observable surgeon characteristics.</p> <p>2. Following publication of these reports, the probability of selection has been associated with the new information imparted by publicly reported quality ratings</p> <p>3. Following publication, the importance of observable surgeon characteristics has declined.</p>	NY CSRS	None	None	None

fid	Author Year (QA)	1. Study Purpose and/ or a priori Hypothesis	2. Geographic Location	3. Study Design/ Type	4. Sample Population/ Procedure	5. Primary Comparison	6. Outcomes	7. Public Report Name and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
790	Rangana than 2009 (Fair)	Evaluates the extent to which use of a website offering physician-level data is affected by three parameters: invitation mode, employment status and invitation message tone.	MA	Randomized Trial	Active and retired employees of GE who resided in MA and received their medical insurance through GE benefits program. n= 19,285	1. Received invitation by US Mail (n=3000) vs Email (n=2111) and retirees (n=1500). 2. All were randomly assigned to receive a gain-focused message two risk-focused messages.	Odds of Registration to view the physician data.	Bridges to Excellence(A web site maintained by a Nonprofit organization that reports physician performance data.	None	Retired vs Active Employees	Physician
10858	Wang 2011 (Good)	Examines the impact of CABG report cards on a provider's aggregate volume and volume by patient severity and then employ a mixed logit model to investigate the matching between patients and providers	PA	One Group, Post Only	PA residents (aged 30 and above) who were undergoing an isolated CABG procedure in PA hospitals and who were admitted between Q3 1998 and Q1 of 2006. n= 114,039)	Post Only: 1998 to 2006	Hospital Quarterly Volume Surgeon Quarterly Volume	PA CABG	None	None	None
2313	Werner 2005 (Good)	To examine the impact of New York's surgeon-specific CABG report card on racial and ethnic disparities in receipt of CABG surgery.	New York	Multiple Groups Pre-Post	Patients admitted to hospitals with the principal diagnosis of AMI in New York and 11 comparison states between 1988 and 1995 (N=928,551)	Pre: 1988-1991 Post: 1992-1995; Intervention: Public Reporting of CABG in New York (N=310,412); Comparison: 11 states during same period without Public Reporting that reported race and ethnicity in the Nationwide Inpatient Sample from the Healthcare Cost and Utilization Project (N=618,139); Also compared racial disparities between New York and comparison states over time from 1988-2000	Racial and ethnic disparities (White vs. Black and Hispanic) in whether CABG was performed during hospitalization, use of cardiac catheterization, and use of PTCA	NY CSRS	None	None	Surgeons potentially selecting patients

**Section B: Contains columns 11 through 18 of all individual provider quantitative studies (J6: J219)**

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
6596	Bundorf 2009 (Good)	None	None	None	<p>The differential effect of birth rates post- vs pre- report cards is positive and statistically significant, indicating that measured performance had larger, positive effect on choice when the information was publicly disseminated to consumers.</p> <p>3 yr lagged birth rate X 1997 0.602**  3 yr lagged birth rate -0.047  1 yr lagged birth rate X 1997 -0.466*  1 yr lagged birth rate 1.177***</p> <p>*** p&lt;0.01  **p&lt;0.05</p>	None	Coefficient on interaction variable for state with mandated coverage and post report card is significant at the 5% in multivariate analyses.	Authors find that public reporting of quality affects clinic choice in a statistically significant way in the market for ART.	Unclear
7739	Epstein 2010 (Fair)	None	None	None	<p>Average marginal impacts of report card mortality rating on surgeon choice, hospital+surgeon specification</p> <p>All Admissions:  Marginal Impact of being rated "worse-than-average":  PA: Pre - -0.2 Post -0.7  Diff -0.4  FL: Pre - -0.4 Post -0.5  Diff -0.1  Diff in Diff - -0.3  Marginal Impact of being rated "better-than-average":  PA: Pre - 1.2 Post 1.4  Diff 0.2  FL: Pre - 1.1 Post 1.3  Diff 0.2  Diff in Diff - 0.0  Average Probability of selection (number of patients):  PA: Pre - 2.7 (17,241)  Post 2.7 (6,414)  FL: Pre - 3.3 (27,844)  Post 3.3 (10,320)</p>	None	None	The analysis finds that referral patterns to cardiac surgeons responded to the May 2002 report card publication in PA in the directions consistent with a causal effect but the same trend occurred in FL.	University of Pennsylvania Research Foundation and AHRQ

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
1185	Glance 2008 (Fair)	None	None	None	<p>Association between Surgeon Observed to Expected Mortality Ratio and Patient Predicted Mortality:</p> <p>Patient predicted probability of death: Base Model: Coef: - 0.338, p&lt;.001; Added race and ethnicity: - 0.342, p&lt;.001; Added hospital indicators: - 0.097, p=.006</p> <p>For every 10-percentage point increase in patient risk of death, there is an associated absolute reduction of 0.034 in the surgeon O to E ratio. After controlling for hospital fixed effects, the absolute reduction in surgeon O to E ratio drops to 0.01 for a 10 percentage point increase in patient risk of mortality.</p>	None	None	<p>Author's summary: There is a significant inverse association between predicted patient risk of death and surgeon quality.</p>	AHRQ

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
5135	Hannan 1994 (Good)	<p>For Individual Surgeons:</p> <p>Actual, Expected, and Risk-Adjusted Mortality in 1989-1992: Based on Surgeons' 1989-1999 RAMR Terciles: [Actual; Expected; Risk-Adjusted (95% CI)]</p> <p>1989-1990: Lowest Tercile (n=32): 1.95; 3.01; 2.01 (1.72-2.33) Middle Tercile (n=32): 3.20; 2.84; 3.50 (3.10-3.93) Highest Tercile (n=31): 4.81; 2.53; 5.90 (5.22-6.63)</p> <p>1992: Lowest Tercile: 2.07; 3.52; 1.82 (1.49-2.21) Middle Tercile: 2.96; 3.89; 2.36 (1.99-2.79) Highest Tercile: 3.49; 3.26; 3.26 (2.68-3.92)</p> <p>-----</p> <p>Actual, Expected, and Risk-Adjusted Mortality in 1989-1992: Based on Surgeons' 1989-1999 RAMR Outlier Status: [Actual; Expected; Risk-Adjusted (95% CI)]</p> <p>1989-1990: Low Outliers (n=6): .77; 3.23; .74 (.41-1.25) Non Outliers (n=84): 3.21; 2.81; 3.55 (3.29-3.83) High Outliers (n=5): 8.72; 2.29; 22.83 (8.49-16.05)</p> <p>1992: Low Outliers (n=6): 1.31; 3.74; 1.09 (.52-2.00) Non Outliers (n=84): 2.77; 3.61; 2.38 (2.13-2.65) High Outliers (n=5): 4.88; 3.17; 4.77 (2.83-7.55)</p>	None	None	No impact of public reporting on volume for surgeons (data not shown)	None	None	<p>For Surgeons, all tercile groups experienced reductions in their RAMR, with the highest RAMR in 1989 being reduced from 5.90 to 3.26 in 1992. Among outliers in the Surgeon category, only those who were the lowest outliers in 1989 (with an RAMR of .74) experienced a RAMR rise in 1992 (1.09). The largest reduction in RAMR was among the high outlying surgeons with 7.06% decrease between 1989-1990 and 1992.</p>	Partial grant from the Agency for Health Care Policy and Research of the US Department of Health and Human Services

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1898	Jha 2006 (Good)	<p>Top performing hospitals and surgeons at baseline continue to perform better in subsequent years.</p> <p>Hospital RAMR at 1996, 2002 and (all years summary): Top Decile, 1.82, 1.55 (1.59); Top quartile, 1.95, 2.03 (1.96) Bottom Quartile, 2.67, 2.13 (2.50); and Bottom decile, 2.89, 2.20 (2.78)</p> <p>Pearson correlation coefficients 0.10 for 1993 with 1996 reports, <math>p=.60</math>; 0.12 for 1994 with 1997 reports, <math>p=.53</math>; 0.37 for 1995 with 1998 reports, <math>p=.04</math>; 0.38 for 1996 with 1999 reports, <math>p=.04</math>; 0.30 for 1997 with 2000 reports, <math>p=.10</math>; and 0.36 for the 1998 and 2002 reports, <math>p=.04</math></p> <p>Surgeon RAMR at 1993-1995, 1999-2001, (and All years summary): Top Decile, 1.71, 1.60 (1.58); Top quartile, 1.94, 1.65 (1.64); Bottom quartile, 2.93, 2.92 (2.93); Bottom Decile, 3.80, 3.20 (3.20)</p> <p>Pearson correlation coefficients for the five sets of reports: .34 for the reports from 1989–91 with 1994–96, <math>p=.005</math>; .42 for the reports from 1991–93 with 1996–98, <math>p&lt;.001</math>; .61 for the reports from 1992–94 with those from 1997–99, <math>p&lt;.001</math>; <math>r=.42</math> for the reports from 1993–95 with those from 1998–2000, <math>p=.0001</math>; and <math>r=.14</math> for the reports from 1994–96 with those from 1999–2001, <math>p=.17</math></p>	<p>2 surgeons (low-mortality) responding to survey stated they left b/c of pressure to reject high-risk patients and documentation made practicing surgery less enjoyable.</p>	<p>Surgeons Discontinuing Practice:</p> <p>Surgeons with poor performance were more likely than others to discontinue surgery in NY.</p> <p>Decreases in numbers especially in bottom quartile, but not statistically significant except in an All Years Summary statistic:</p> <p>Top quartile surgeons at baseline: 5.1% (<math>n=128</math>) left; 2nd quartile at baseline: 6.7% (<math>n=128</math>) left; 3rd quartile: 8.0% (<math>n=127</math>) left; Bottom quartile: 21.3% left (<math>n=127</math>); OR (95% CI), <math>p</math> value: 3.5 (1.35,9.01), <math>p=.01</math></p> <p>31 surgeons identified between 1989 and 1999 that ceased to perform surgery in NY: no info on 4 and 2 died. Remaining 25: 9 practicing outside NY, 9 retired, 7 working in nonclinical positions</p> <p>Survey responses from 18 of 25: 10 said report card had no impact, 2 said it had a minimal impact, and 6 said moderate to substantial impact.</p>	<p>Surgeon Market Share: no evidence that report cards affected subsequent market share</p> <p>Impact of Performance Reporting on Surgeons' Subsequent Market Share: All Years (1992, 1995, 1996, 1997, 1999 report releases): [Pre report Market share %; Post report Market share %; %-point change]</p> <p>Top 10 Percent Surgeons: 9.0; 8.6; -.4 Top Quartile Surgeons: 25.0; 23.2; -1.8 Bottom Quartile Surgeons: 24.5; 23.8; -.7 Bottom 10 Percent Surgeons: 8.6; 8.8; .2 Parameter estimate (P-value) for all years: -.11%(.13)</p>	None	None	<p>Baseline performance is associated with future performance (i.e. top performing hospitals at baseline continue to be top performing hospitals in subsequent years). There were no trends regarding report cards and market shares at either the hospital or individual surgeon levels. Lower performing surgeons were more likely to quit practicing in NY than top performing, although some of this may not be associated with the release of performance data.</p>	NR



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4377	Mukamel 1998 (Fair)	None	Published RAMR changed prices charged by surgeons by (Regression coefficient) New York City: -0.01 Upstate: -1.3 -Albany County: -0.1 -Erie County: -1.7	Hospitals -Increase in RAMR of 1 percentage point = decrease in growth rate in market share of 1.8 percentage points -Median change in market share (all hospitals)=1.9 percentage points; median RAMR=4.2 Individual surgeons -Increase in RAMR of 1 percentage point =decrease in growth rate of 7 percentage points -Median surgeon with 60 surgeries=loss of 4.2 patients due to a 1 percentage point increase in RAMR -Limiting analysis to physicians >10 cases in 1991, increase in RAMR of 1 percentage point= difference in mortality rates increased from 7 to 10 percentage points ----- By region Published RAMR changed growth by New York City: -6.3 percentage points Upstate: -8.8 percentage points -Albany County: +8.0 percentage points -Erie County: -8.2 percentage points -Monroe County: -14.5 percentage point	None	None	None		Not reported

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/Conclusions	18. Funder of Research
3922	Mukamel 2000 (Fair)	None	None	None	<p>Survey responses:</p> <p>Role of Quality in Contracting Choices: Quality is the most important consideration: 60% Quality is the second most important consideration: 33%</p> <p>Role of the New York State Cardiac Surgery Reports in Contracting Choices: MCO has examined the New York State reports: 64% MCO is willing to pay \$1,000 to obtain the reports: 43% For those MCOs who examined the reports, read the information in the report: * Report was a sole source: 0% * Report was a major source: 32% (20% of all MCOs) * Report was a minor source: 58% (37% of all MCOs) * Report information had no effect on quality evaluation: 10%(6% of all MCOs)</p> <p>Value of the New York State Reports to MCOs Considering Quality to Be the Most Important Factor: MCOs that reviewed the reports: 66% MCOs that are willing to pay \$1,000 for the reports: 47%</p>	None	None	<p>Author's conclusion: MCOs tend to prefer high-volume surgeons and surgeons designates as high-quality outliers. They do not, however, seem to make choices based on poor-quality outlier designation of actual RAMR. Furthermore, for the majority (over 80%) we did not find a systematic bias for either higher than or lower than average quality surgeons.</p>	AHRQ

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
4377	Mukamel 1998 (Fair) Cont.				<p>Other Factors Important in Contracting Decisions: Price is the most important consideration: 13% Geographic location is the most important consideration: 13%</p> <p>Percent of MCO/Regions with Observed Contracting Choices that are 2 SDs beyond the expected, under the null hypothesis of random choice: H1: Average MCO quality (RAMR) is above (below) the expected: MCO/Regions: 11.2%, t= 0.226 Average MCO quality (RAMR) is below (above) the expected: MCO/Regions: 7.1%</p> <p>H2 Percent of MCOs with more than expected poor-quality outlier surgeons: MCO/Regions:0%, t= 0.482</p> <p>H3 Percent of MCOs with more than expected high-quality outlier surgeons: MCO/Regions: 8.3%, t= 4.618***</p> <p>H4 Percent of MCOs with more than expected high-volume surgeons: MCO/Regions: 19.8%, t= 9.301***</p>				

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
3127	Mukamel 2002 (Fair)	None	None	<p>High-quality vs. low-quality vs. low-volume surgeon vs. non-outlier: contract with MCO</p> <p>Upstate New York: 85.3% vs. 78.9% vs. 67.7% vs. 46.8%</p> <p>Downstate New York: 88.9% vs. 76.56% vs. 53.3% vs. 37.7%</p> <p>Probability of MCO/Surgeon Contract (unadjusted vs. selectivity adjusted vs. Unadjusted; subsample of MCOs with Selectivity &lt;80%)</p> <p>Excess RAMR: -0.43 vs. -1.10 vs. -0.45 (p&lt;0.01)</p> <p>High-quality outlier: 1.63 vs. 3.20 vs. 1.81 (p&lt;0.01)</p> <p>Low-quality outlier: -0.37 vs. -0.86 vs. -0.43 (NS)</p> <p>Low volume: -0.75 vs. -1.38 vs. -0.76 (p&lt;0.01)</p> <p>Upstate excess RAMR: -0.13 vs. -0.37 vs. -0.19 (NS)</p> <p>Upstate high-quality outlier: -1.43 vs. -3.91 vs. -1.83 (p&lt;0.01)</p> <p>Upstate low-quality outlier: 0.32 vs. 2.22 vs. 0.66</p> <p>Upstate low volume: -0.56 vs. -2.31 vs. -0.51 (p&lt;0.05)</p> <p>For-profit excess RAMR: 0.01 vs. 0.15 vs. 0.03 (NS)</p> <p>PPO excess RAMR: -0.03 vs. -0.10 vs. -0.03 (NS)</p>	None	None	None		AHRQ

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
3127	Mukamel 2002 (Fair) Cont.			Staff model HMO excess RAMR: 0.02 vs. 0.24 vs. 0.01 (NS) Other MCO excess RAMR: -0.01 vs. 0.03 vs. -0.00 (NS) Surgeon's HHI excess RAMR: 4.48 vs. 9.16 vs. 4.62 (p<0.01) Surgeon's years since graduation from med. school: 0.12 vs. 0.11 vs. 0.13 (p<0.01) Square of years since graduation: -0.002 vs. -0.001 vs. -0.002 (p<0.01) Number of observations: 1588 vs. 1588 vs. 1458 (NS)					
8047	Mukamel 2004 (Good)	None	None	None	The inferred RAMR is significantly associated with probability of selection in both periods - a higher RAMR (i.e. lower quality) lowers the surgeon's odds of being selected by about 7% to 8%. There was no significant change between two periods, indicating that the role of inferred quality has not changed with publication of the report cards. Inferred RAMR - 0.026 (NS) Inferred RAMR x Year 2 - 0.164 (NS) The effect of other observable characteristics (price, years of experience) declines as public report comes out.	None	None	The study offers evidence to indicate that report cards do have an impact on surgeon selection.	Unclear

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
790	Ranganathan 2009 (Fair)	None	None	None	None	Odds of Registration Rate Email vs Mailed Information 6.42 (4.82,8.54) p<0.001 Moderate risk-focused vs Gain focused 0.97 (0.76, 1.25) p=0.818 High risk-focused vs Gain focused 0.84 (0.65, 1.09) p=0.197	Active vs Retired 0.37 (0.26, 0.52) p<0.001	Effect of Invitation Mode: Significantly higher registration rate among email vs mailed Effect of Employment Status: Retired employees were significantly more likely to register than active Effect of Tone of Message: Nature of the message was not significantly associated with registration rates.	Robert Wood Johnson Foundation

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
10858	Wang 2011 (Good)	None	None	None	<p>HOSPITAL: Hospital Quarterly Volume (n=1469 hospital quarters)</p> <p>Mean volume: All CABG cases - 76.5 Low-severity CABG cases - 45.5 High-Severity CABG cases - 30.3</p> <p>High Mortality Flag: All CABG cases -5.600 Low-severity CABG cases -4.477 High-Severity CABG cases -1.195</p> <p>Low Mortality Flag: All CABG cases 5.125 Low-severity CABG cases 4.669 High-Severity CABG cases 1.578</p> <p>SURGEON: Surgeon Quarterly Volume (n=6586 patients) With Non-Rated Surgeons- Mean volume: All CABG cases - 21.9 Low-severity CABG cases - 13 High-Severity CABG cases - 8.7</p> <p>High Mortality Flag: All CABG cases - 4.762*** Low-severity CABG cases -3.147*** High-Severity CABG cases -1.527**</p>	None	None	Public reporting led to decrease in volume for unrated and poor performing surgeons, but interestingly, the volume of the high performing surgeons does not increase by an offsetting amount. They do not find statistically significant effect on hospital volume once we control for unobserved heterogeneity. Severity analysis results in similar results.	Unclear

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
10858	Wang 2011 (Good) Cont.				<p>Low Mortality Flag: All CABG cases 4.634 Low-severity CABG cases 4.076** High-Severity CABG cases 0.921</p> <p>Without Non-Rated Surgeons- Mean volume: All CABG cases - 25.1 Low-severity CABG cases - 14.8 High-Severity CABG cases - 10.1</p> <p>High Mortality Flag: All CABG cases - 7.911*** Low-severity CABG cases -4.946*** High-Severity CABG cases -2.872**</p> <p>Low Mortality Flag: All CABG cases 3.288 Low-severity CABG cases 2.835** High-Severity CABG cases 0.578</p>				



Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
2313	Werner 2005 (Good)	None	<p>1)Changes in Percentage of Patients with AMI Undergoing CABG Surgery in New York and Comparison States Before and After New York's Public Release of CABG Report Card: [Before Public Report (95% CI); After Public report(95% CI); Change in Percentage (95% CI)]</p> <p>Disparity in CABG use between White and Black patients: New York White vs Black disparity: 2.7* (1.8-3.6); 5.0*** (3.8-6.2); 2.3*** (1.4-3.2) Comparison States White vs Black Disparity: 3.4*** (2.6-4.3); 3.7*** (2.8-4.5); .2 (-.8-1.3) Difference in Disparities between New York and Comparison States: -.7 (-1.9-.4); 1.3(-.2-2.9); 2.0** (.7-3.4)</p> <p>Disparity in CABG use between White and Hispanic patients: New York White vs. Hispanic Disparity: .7 (-.9-2.2); 3.2*** (1.6-4.7); 2.5**(.7-4.3) Comparison States White vs Hispanic Disparity: 2.1*** (.9-3.3); 1.2 (-.4-2.8); -.9 (-2.8-1.0) Difference in Disparities between New York and Comparison States: -1.4 (-3.2-.4); 2.0 (-.4-4.4); 3.4** (.8-5.9)</p>	None	None	None	None		Grants from Leonard Davis Institute of Health Economics at the University of Pennsylvania, and National Research Service Awards from AHRQ

Refid	Author Year (QA)	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2: (Harms)	13. Results: KQ3: (Provider Outcomes-QI and other behavior)	14. Results: KQ4: (Selection by Patients and Payers)	15. Results: KQ5: (Impact of Public Report Characteristics)	16. Results: KQ6: (Impact of Contextual Factors)	17. Summary/ Conclusions	18. Funder of Research
2313	Werner 2005 (Good) Cont.		<p>2) Changes in Percentage of Patients with AMI Undergoing Cardiac Catheterization and PTCA in New York and Comparison States Before and After New York's Public Release of CABG Report Card: (White vs. Black and Hispanic) [Before Public Report (95% CI); After Public report(95% CI); Change in Percentage (95% CI)]</p> <p>New York Cardiac Catheterization for AMI Racial and Ethnic Disparity: 5.3*** (2.6-7.9); 3.8** (1.1-6.5); -1.4 (-3.0-.2)</p> <p>Comparison States Cardiac Catheterization for AMI Racial and Ethnic Disparity: 5.0*** (2.1-8.0); 4.0** (1.5-6.5); -1 (-5.0-2.9)</p> <p>Difference in Disparities between New York and Comparison States: .2(-4.1-4.6); -.2(-4.7-4.3); -.4 (-4.6-3.7)</p> <p>New York PTCA for AMI Racial and Ethnic Disparity: 3.0*** (1.5-4.6); 4.1*** (2.5-5.7); 1.1* (.1-2.0)</p> <p>Comparison States PTCA for AMI Racial and Ethnic Disparity: 4.2*** (2.4-6.0); 4.1*** (2.2-6.0); -.1 (-3.0-2.8)</p> <p>Difference in Disparities between New York and Comparison States: -1.1 (-3.2-1.0); 0.0 (-3.0-3.0); 1.1 (-1.8-4.1)</p> <p>*p&lt;=.05, **p&lt;=.01, ***p&lt;=.001</p>						

## Appendix K. Individual Providers: Qualitative Evidence

### Section A: Contains columns 1 through 8 of all individual provider qualitative studies (K1: K12)

Refid	Author Year	1. Study Purpose and/or a priori Hypothesis	2. Geographic Location	3. Study Design/Type	4. Sample/ Population: Who or what is studied?	5. Outcomes	6. Name of Report or Subject Matter	7. Results	8. Summary
4218	4218 Burack 1999	To examine the effect of public reporting on the practice of cardiac surgery as perceived by surgeons.	NY	Descriptive Survey	All active cardiac surgeons in NY in April 1997. n= 104 responded; 69.3% of 150	opinion regarding the exposure to public reporting, change in overall practice, and areas needing improvement within the CSRS. Finally, based "primarily" on the CSRS, several questions examined the denial of treatment to high-risk cases.	NYS CSRS	<p>Most surgeons (67%) refused treatment to at least one high-risk CABG patient over the previous year (Fig 1). In New York State, high-risk patients with an ascending aortic dissection were more likely to go to the operating room than high-risk patients with coronary artery disease (p , 0.001).</p> <p>Some surgeons (30%) perceived a significant alteration in their own professional practice, and more (37%) felt that their peers had changed. Significant change was commonly specified as change in patient profile, change to a non-cardiac thoracic practice, relocation to another state, or retirement from cardiac operation. On a daily or weekly basis, surgeons were twice as likely to discuss data with a colleague (44%), than with a patient (29%). Only a small number of surgeons (9%) frequently used the CSRS software to calculate operative mortality before operation, and most (53%) never used the predictive model at any time.</p>	Harms Confirmed

Refid	Author Year	1. Study Purpose and/or a priori Hypothesis	2. Geographic Location	3. Study Design/Type	4. Sample/ Population: Who or what is studied?	5. Outcomes	6. Name of Report or Subject Matter	7. Results	8. Summary
4539	4539 Hannan, et al 1997	To determine the reaction of New York cardiologists to the New York CABG surgery reports.	New York	Descriptive Survey	Surveys regarding cardiologists' opinions and use of the June 1995 NY CABG report were mailed to all (1267) NY cardiologists listed in the State Educations Department's Physician master File as specializing in cardiology. 36% response rate (n=450).	<p>All self-reported:</p> <p>Discussing information with patients: Yes or No</p> <p>The following use "Very much," "Somewhat," and "Not at all" scales: Accuracy of report Attitudes towards format of report Impact of report on referrals</p> <p>Usefulness in making referral decisions for patients needing CABG surgery: 5-point Likert scale: Not at all Useful (1-2); Somewhat useful (3); Extremely useful (4-5)</p>	New York CABG Report	<p>Responses to Questionnaire:</p> <p>Do you routinely discuss the information in the cardiac report with your patients: Yes (89) 22%; No 310 (78%)</p> <p>For the following: Very much (%); Somewhat(%); Not at all(%)</p> <p>Do you feel the information is accurate: 27(7%); 235(60%); 130(33%)</p> <p>How much do you feel that the report:</p> <p>Is too technical: 11(3%); 84(23%); 272(74%)</p> <p>Has too many graphs: 8(2%); 86(23%); 274(75%)</p> <p>Has too many charts: 8(2%); 88(24%); 270(74%)</p> <p>Is misleading in interpretation of records of physician and hospital: 139(37%); 175(46%); 63(17%)</p> <p>how often has the information affected your choice when referring your patients to cardiac surgeons: 25(6%); 129(32%); 248(62%)</p> <p>For the following: Not at all useful; Somewhat useful; Extremely useful; Average (scale of 1-5)</p> <p>How useful do you consider this information in making referral decisions for patients needing CABG surgery: 215(53%); 127(31%); 65(16%); 2.40</p>	Primary results regarding how cardiologists feel about the NY Cardiac Report show that a large majority (93%) have at least some reservations about the accuracy of the data in the report. As far as formatting, they appear to be comfortable with the report, but a large portion (83%) are at least somewhat hesitant about the reports being misleading. Moreover, only 22% discuss the information with their patients, and most (62%) claim that the information has not affected their choices when referring patients at all. Finally, more than half say they do not consider the information useful at all when making referral decisions for patients needing CABG surgery, and only 16% claim it to be extremely useful. In sum, the cardiologists do not use the information very frequently and feel that the data may be inaccurate and the interpretation misleading.

Refid	Author Year	1. Study Purpose and/or a priori Hypothesis	2. Geographic Location	3. Study Design/Type	4. Sample/ Population: Who or what is studied?	5. Outcomes	6. Name of Report or Subject Matter	7. Results	8. Summary
4883	4883 Schneider & Epstein 1996	To find out whether cardiologists and cardiac surgeons were aware of the Pennsylvania Consumer Guide to Coronary Artery Bypass Graft Surgery report, and if so, to determine their views on its usefulness, limitations and influence on providers.	Pennsylvania	Descriptive Survey	Opinions and attitudes of Cardiac Surgeons and Cardiologists in Pennsylvania. Randomly selected sample of 50 percent of Pennsylvania cardiologists and cardiac surgeons. Total response rate out of 697 physicians was 65%. 64% response overall response rate among cardiologists and 74% among cardiothoracic surgeons. After excluding incomplete surveys or ineligible physicians, n=337 (279 cardiologists and 58 cardiac surgeons)	<p>All self reported:</p> <p>Awareness of the guide</p> <p>Opinion of usefulness: importance of risk-adjusted mortality; importance of clinical outcomes other than mortality; Importance of Consumer Guide Ratings; Influence of consumer guide rating on referral recommendations; Discussed Consumer Guide with percentage of patients.</p> <p>Opinion of limitations: multiple questions related to potential limitations</p> <p>Influence on providers/Access to Care: 5 Point Likert scale, for surgeons: Willingness to operate; for cardiologists: difficulty finding surgeons willing to operate</p>	<p>PA Consumer Guide to Coronary Artery Bypass Graft Surgery</p>	<p>Aware of Cardiac Guide: Cardiologists: 82% Surgeons: 100%</p> <p>Views on Importance of Outcomes and the Consumer Guide in Assessing the Quality of a Cardiac Surgeon's Performance: [#,(%) for Cardiologists; #,(%)for Cardiac Surgeons]</p> <p>Importance of risk-adjusted mortality***: Minimally or not important: 11(5); 8(14) Moderately Important: 32(12); 15(26) Very or extremely important: 227(84); 35(60)</p> <p>Importance of clinical outcomes other than mortality***: Minimally or not important: 3(1); 3(5) Moderately important: 31(12); 12(21) Very or extremely important: 236(87); 423(74)</p> <p>Importance of Consumer Guide Ratings: Minimally or not important: 158(70); 39(68) Moderately important: 49(22); 12(21) Very or extremely important: 20(9); 6(11)</p> <p>Influence of Consumer Guide ratings on referrals (only cardiologists): none: 1240(62) Minimal: 57(25) Moderate: 25(11) Substantial: 5(2)</p> <p>Percentage of patients with whom respondent discussed Consumer Guide in past year: 0: 149(66); 33(57) 1-10: 54(24); 22(38) &gt;10: 24(11); 3(5)</p> <p>-----</p> <p>Limitations of the Consumer Guide Rated by Respondents as Very or Extremely Important: [#,(%) for Cardiologists; #,(%)for Cardiac Surgeons]</p>	<p>All cardiac surgeons were aware of the report and most of the cardiologists were. Overall, both groups thought there were some limitations to the report, but the biggest impact seemed to be in access to care for highest risk patients; 63% of surgeons said that they were less willing or much less willing to operate. None were more willing. Of the cardiologists, a majority (59%) said it was at least somewhat more difficult to find surgeons willing to operate on their most severe cases. Of note, 10% stated it was easier to find surgeons willing to operate. Only 30% of cardiologists said the Consumer Guide had a moderate to substantial influence on their referrals.</p>

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4883	4883 Schneider & Epstein 1996 <i>Cont.</i>							<p>Important factors other than mortality rates not included: 171(78); 45(78)  Risk-adjustment methods inadequate to compare surgeons fairly: 169(77); 49(85)  Mortality rates are an incomplete indicator of surgeon's quality: 162(74); 49(85)  Surgeons and hospitals can manipulate data: 113(52); 33(57)  Ratings are based on out-of-date information: 93(43); 20(35)  A higher mortality rate is probably due to chance alone: (49(23); 16(28)  Few surgeons and hospitals report mortality rates that are higher or lower than expected: 39(18); 11(20)  Rating are inaccurate for surgeons with small caseloads: 31(15); 11(20)</p> <p>Differences between two groups  ***p&lt;.001; **p&lt;.01</p> <p>Difficulty Finding a Surgeon Willing to Operate in Most Severe Cases (for Cardiologists, by % responding to each option):  Much More Difficult: 18  More Difficult:41  No Change: 31  Less Difficult: 8  Much less difficult: 2</p> <p>Willingness to Operate in Most Severe Cases (For Cardiac Surgeons, by % responding to each option):  Much Less Willing: 35  Less Willing: 28  No Change: 37</p>	

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11695	Abraham 2011	To investigate the set of factors that consumers consider when selecting a provider.	Minneapolis MN	Descriptive Survey	467 out of 699 (66.8%) patients during one week in April 2010 at 4 University of Minnesota clinics	Factors influencing patients' decisions in provider selection. Awareness and use of internet sources of information	Any available in MN	<p>Factors influencing patients' provider selection</p> <p>90.93% reputation of the organization</p> <p>90.09% reputation of physician</p> <p>83.26% MD in insurer's provider network</p> <p>72.20% appointment availability</p> <p>69.00% referral from MD</p> <p>65.01% recommendation from family or friends</p> <p>44.29% cost</p> <p>41.50% distance to clinic</p> <p>24.20% websites that report clinical quality data</p> <p>8.97% advertisements</p> <p>Awareness of internet sources</p> <p>36% reporting hearing of at least one source but the majority of these are Angie's List</p> <p>13% when Angie's List is excluded only 2% (9 respondents) indicated non Angie's list was important in selection</p>	Only 13% of people reported awareness of specific websites once a general site, Angie's List was not included. Only 2% report the website was important in selection of a provider. Overall few consumer are aware of or use websites with quality information. Primary factor in decisions are reputation and trusted referral from another MD or family and friends.
873	Barr 2008	This study of physicians in office-based practice was undertaken to explore physicians' willingness to talk with patients about hospital quality and data reports as well as their views of such reports.	Seven States/Regions	Interviews	56 physicians in seven geographic locations Round 1: North Carolina, Connecticut, and New York Round 2: Rhode Island, Wisconsin, Western New York, and Los Angeles, California	Physician views about communication with patients about Public reports	Hospital Compare	<p>Physicians' responses to the patients in the scenarios can be categorized into four major themes: (a) rely on existing physician-patient relationships, (b) acknowledge and consider patient perspectives, (c) take actions to follow up on patient concerns, and (d) provide their perspectives on quality reports.</p> <p>Physicians in both rounds of interviews expressed their views about hospital quality reports. Three themes were identified from these responses: (a) perceived lack of methodological rigor in public reports, (b) content considerations for public reports, and (c) attitudes/experience regarding hospital quality reports, both internal and public.</p>	the study findings suggest that physicians will be responsive to patients' inquiries about hospital quality and will discuss hospital public reports.

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341	Chen 2010	To investigate the Diabetes Mellitus (DM) providers' preferences towards four report card attributes: update frequency, risk adjustment, content information and display format.	Northern Taiwan	Descriptive Survey	236 Doctors, hospitals or clinics who treated more than 50 diabetic patients in the first half of 2007. Response rate: 236/814, 29%	Doctors' preferences for the attributes of the report card, rankings of attributes	General	The most preferred attribute mix is a one-year update frequency, risk adjustment, detailed scores of technical quality and interpersonal quality and a bar chart with evaluative cues.  Risk adjustment for patient characteristics were the most important attribute (44.7%), followed by content information (25.2%), display format (18.3%), Update frequency (11.8%)	Author's summary: Among four attributes, we found that doctors' preferences are centered upon risk adjustment for patient characteristics, more detailed disclosure of quality information, a bar chart display and longer update frequency.
2653	Cheng 2004	To understand the experience of consumers searching for physician performance information and to investigate the potential impact on their propensity to change doctors if hypothetically provided with physician specific performance information	Taiwan	Descriptive Survey	4015 adults aged over 20 years contacted by random digit dialing telephone calls.	if they have ever compared the quality of care provided by physicians in their area; if they would consult a performance report if it was available; if they would change doctors on the basis of information provided in the report.	NR	1. The overall proportion of subjects who had made comparisons between doctors on the basis of their quality of care was 49.6% (n=1844). 2. About 73% (n=2796) of the subjects interviewed stated that they would consult reports of doctors' training, specialist qualifications, and their attitude towards patients if they were available 3. A total of 2888 respondents (76.7%) said that they would change to another doctor if the doctors they usually consulted performed badly according to the reference data.	Authors conclude that providing physician performance information has a significant potential impact on consumers' choice of healthcare providers.
1366	Fanjiang 2007	To evaluate the usefulness of web-based physician-level data for patients choosing a new primary care physician (PCP)	California	Descriptive Survey	All patients newly joining the practice and a random sample of existing patients n=382 visited site (17% of those sent invitation); 301 completed questionnaire.	The odds of choosing a high performing physician given a particular performance priority over that of choosing such a physician by chance after viewing a web site with physician information including patient experience scores.	Web page with physician information and patient experience ratings	51% of respondents cited the patient experience scores as the most important to their physician choice and this was significantly higher (p<.001) than other information such as office hours and location (39%), credentials (38%), advice from friends (24%). Interpersonal quality (37%) and other patients' willingness to recommend were the most frequently cited as specific measures key to choice.  Odds of Choosing a Physician with High Performance on a Given Patient Experience Measure Patient experience measure cited as most important: 1. Willingness to recommend physicians - 9.7 (3.3, 28.5) 2. Interpersonal quality - 9.5 (3.4, 26.6) 3. Appointment Access - 14.1 (1.6, 114.7) 4. Coordination of Care - 4.88 (0.9, 28.4)	Authors conclusions: 1. with minimal outreach, one-sixth of patients seeking a new PCP and one quarter of those newly joining a practice used web-based physician-level information 2. of the types of information presented, survey-based measures of physician performance were most frequently cited as important, and among survey-based measures, patients particularly valued measures of physician interpersonal quality and other patients' recommendations of the physician. 3. patients using Web-based quality information made choices that were well-aligned with their stated priorities.



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11694	Friedberg 2010	To examine whether and how physician groups are using patient experience data to improve given the public reports include these outcomes	Massachusetts	Interviews	72 out of 117 (62.5%) eligible leaders of Physician Groups in MA in 2007 having at least 3 physicians and providing primary care to adults.	Open-ended questions about improvement activities, probes about specific types of activities, improvement targets for the activity, level of engagement based on activities	MA Physician Group Report on Patient Experience	<p>Level of engagement</p> <p>1: 17% (not aware of reports and did not use)</p> <p>2: 22% (take one or more actions but focus on low performers)</p> <p>3: 61% (group-wide improvement activities)</p> <p>Level 3 group were more likely to be Integrated medical groups (<math>p &lt; .005</math>); employ the majority of their physicians (<math>p &lt; .05</math>); be network affiliated (<math>p &lt; .05</math>)</p> <p>The most common targets of actions about level 3 were: 57% access; 48% communication with patients; 45% customer service</p> <p>The most common interventions were changes in check-in (70%), classes for admin. asst. 57%, EHR-based activities 50%, and reassign activities 45%.</p>	Majority of MN MD groups are working to improve patient experience (61%), though some report no efforts (17%). Improvements are targeting work flow and non clinician activities as opposed to physician performance or patient self-management education.

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2180	Fung 2005	To assess patients' use of and preferences for information about technical and interpersonal quality when using simulated, computerized health care report cards to select a primary care provider (PCP).	Los Angeles County	Lab-type experiment	304 participants who were 18 years of age or older, lived in Los Angeles County, and had a regular or primary care physician	The participant choice when presented with a choice of two physician who differed in technical quality and interpersonal ratings.	Hypothetical Report on General Practice	<p>Principal Finding: participants use both technical and interpersonal quality ratings to select a physician from the choices offered  66% chose the physician who excelled in technical care 3 or more times out of 5 (95% CI: 62-72 %)  33% chose the physician who excelled in interpersonal care 3 or more times out of 5 (95% CI: 28-38 %)</p> <p>From follow up questionnaire: the median trust in expert review of medical records is significantly higher than for patient reports ( <math>p &lt; 0.001</math>), with the differences being most apparent at the highest levels of support (35 percent of participants trusting medical records "a lot," as compared with 19 percent trusting patient reports "a lot")</p> <p>mean values for the responses to the questions in the paper questionnaire that assessed attitudes towards different dimensions of technical and interpersonal quality, indicates that dimensions of both technical and interpersonal quality are important to subjects. For example, participants rated communication as at least as important as preventative care.</p>	participants use both technical and interpersonal quality ratings when selecting a PCP and that a majority clearly favors technical quality of care, but not to the exclusion of interpersonal quality.

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2853	Longo & Everett 2003	To evaluate how patients view healthcare consumer reports, whether healthcare consumer reports lead to changes in patient behavior, and which aspects of reports are the most important/helpful to patients.	Colombia, Missouri	Descriptive Survey	Outpatients at UMHC clinics; N=925	All self-reported on survey: Patient views on: Perceptions of report: single question Potential use of report Most helpful/important aspects of report	University of Missouri Health Sciences Center Consumer Report	<p>Overall Perspectives on Consumer Reports: An effective means of comparing different hospitals and/or healthcare providers: 59.9% Useful resource to have for healthcare decisionmaking: 55.2% "Nice-to-know" info, but does not make a difference in actions: 34.1% Hospital advertising or public relations: 30.2% A waste of time: 8.4%</p> <p>Based on Information in report, how likely to: [by %, Very likely; Somewhat likely; Not too likely; Not likely at all; Don't know] May change doctors or hospitals: 4.1; 8.1; 30.4; 47.4; 10.1 May use info to make decision re: medical procedure at our medical center: 21.9; 31.9; 18.1; 14.7; 13.4 Keep this report for future reference: 24.6; 22.2; 19.6; 21.3; 12.3</p> <p>Highest ranking most important and/or helpful sections of report by presence of chronic Disease in Respondent and/or Family Member: [Disease Present: Section most helpful; % Respondents with disease] Strokes: Heart Disease; 74.6 and Strokes; 64.4 Diabetes: Diabetes; 74.4 Breast Cancer: Breast Cancer; 68.9 Other Cancer: Heart Disease; 54.7 and Other Cancer: 49.3 No Chronic Disease: Comparisons to National Average; 50.4 Heart Disease: Heart Disease; 79.8 Alzheimer's: Heart Disease: 52.6 (no Alzheimer's section in report) High Blood Pressure: Heart Disease: 60.8% Overall: Heart Disease; 50.5%</p>	Overall, large percentages of respondents said that they believed the reports were effective in comparing different hospitals and health care providers. Just over a third said that it didn't really make a difference to them, and 8.4% said it was really just a waste of time. Almost half said that they were not at all likely to change doctors or hospitals due to the reports, but slightly over half said they were at least somewhat likely to use the information to decide whether or not to have certain medical procedures there. Respondents were more likely to say that the most interesting and/or helpful part of the report were sections pertaining to chronic illnesses that they or their family members had

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3148	Marshall 2002	To examine the attitudes of service users, general practitioners, and clinical governance leads based in primary care trusts about the public dissemination of comparative reports on quality of care in general practice	Urban NW England	Focus Groups	12 focus groups including four with 35 service users (patients), four with 24 general practitioners, and four with 18 clinical administrators	Format and Content of Public Report	Hypothetical Report on General Practice	Four major themes emerged from the data: a difference between the initial reaction and the considered response to the report cards --initial reaction strongly negative but this changed over the course of the discussion, the usefulness of the data to the key stakeholders --most would not use as they either felt choice was inappropriate in this area (anti-consumerism) or valued other things (location) immediate concerns about the principle and practice of report cards --perceived as politically motivated and people were concerned about the data quality and impact. the wider implications of disseminating comparative information --concern that 'good' practices would be swamped	Despite support for the principle of greater openness, the planned publication of information about quality of care in general practice is likely to face considerable opposition, not only from professional groups but also from the public. A greater understanding of the practical implications of public reporting is required before the potential benefits can be realized.
1806	Marshall 2006	To explore the informational needs of patient in primary care and develop an information source about general practice services.	England	Focus Groups Interviews and observations	103 members of the public, staff from 19 general practices and 4 NHS managers and the research team.	Format and Content of Public Report	Hypothetical Report on General Practice	Themes Importance of designing for public: Practice staff and public wanted different information Influence of performance reporting: Was a supplement to personal experience and so new guide highlighted patient experience and included qualitative descriptions of the practice. Attitudes: Participants disliked League Tables and were not confident in the information and worried about the competition it might inspire. Knowing the source: Patients were concerned about vested interests of the report producers Content expectations: People wanted general information about the system, information about providers (gender, training), and what services are available. They were more interested in their commitment to improve then in their actual scores.	Finding suggest that making information available to the general public requires a different approach in terms of content and format

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2357	Narins 2005	To systematically evaluate the opinions and experiences of all physicians who were included in the most recent PCI in New York	New York	Descriptive Survey	All interventional cardiologists in New York State included in the most recent PCI in New York state report 1998-2000  n=120 (65% of 186 sent the questionnaire)	Self-report questionnaire	PCI in New York State (1998-200)	Survey Responses: Strongly Disagree vs. Disagree vs. Agree vs. Strongly Agree vs. No Response Knowledge that mortality statistics will be publicly disseminated has, in certain instances, influenced your decision on whether to perform angioplasty on individual patients: 5.0% vs. 15.0% vs. 43.35 vs. 35.8% vs. 0.8% Knowing that your patient mortality statistics will be made public influences your decision on whether to intervene in critically ill patients with high expected mortality rates (e.g., patients with cardiogenic shock): 6.7% vs. 12.5% vs. 31.7% vs. 47.5% vs. 1.7% Patients who might benefit from angioplasty may not receive the procedure as a result of public reporting of physician-specific mortality rates: 0.8% vs. 15.0% vs. 44.2% vs. 39.2% vs. 0.8% Do you agree or disagree that the model is sufficient to avoid penalizing physicians who perform higher-risk interventions?: 52.5% vs. 32.5% vs. 10.0% vs. 3.3% vs. 1.7% Physicians may report higher-risk conditions to improve their risk-adjusted mortality statistics: 2.5% vs. 8.3% vs. 55.0% vs. 33.3% vs. 0.8%	Public reporting influences physicians decision-making about performing PCI in New York state.
3978	Pettijohn 1999	To investigate the impact of outcomes data reporting on the practice of interventional cardiology.	USA	Descriptive Survey	Interventional Cardiologist in the USA (n=1444; 28% response rate)	Effects of outcomes data reporting on their approach to high-risk patients who required interventional procedures.	NR	85% of the cardiologists followed their own outcomes data. Of the respondents, 12% said that outcomes reporting would have no effect on their willingness to perform procedures on high-risk patients. 88% of the respondents said that if outcomes were reported, they would be somewhat or much less likely to perform interventions on high-risk patients.	Authors results support the hypothesis that outcomes reporting would limit the access of high-risk patients to interventional cardiology procedures in the USA

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3554	Schultz 2001	To investigate consumers' use of report cards that provide information on service quality and satisfaction at the provider group level	Minneapolis - St. Paul	Descriptive Survey	Employees of firms (28 large) aligned with a purchasers group BHCAG who had Choice Plus, specific plan coverage. n=996 single coverage n=913 family coverage	Probability of seeing the report card, finding it useful and selecting a care system based on the contextual factors	Performance Results Book (PRB)	<p>Probability - Respondents' Ease of Selecting a Care System(coefficients)</p> <p>See PRB      Single (0.0350) Family (-0.0235)  PRB Helpful      Single (-0.1610) Family (0.2082)</p> <p>Probability - Recalled Seeing the Report Card (coefficients)</p> <p>Married                      Single (none)  Family (0.1629)  Female                      Single (0.1205)  Family (0.2351**)  Age                      Single (0.0064)  Family (-0.001)  Technical School                      Single (0.2673**) Family (-0.0160)  Income Missing                      Single (-0.329*) Family (0.556)  Information from Experience Single (0.1901**) Family (0.493)  Premium Important                      Single (-0.2097*) Family (-0.0426)  Large Company                      Single (-0.6633***) Family (-0.2933**)</p> <p>***p&lt;0.01  **p&lt;0.05  *p&lt;0.10</p>	The findings show that health care consumers are using satisfaction and quality information provided by their employer. Consumers are actively involved in the selection of provider groups based on factors other than price and covered benefits, an encouraging finding for advocates of managed competition
6600	Stein 2009	To examine consumer preferences regarding content and use of provider performance data and other provider information to aid in consumers' decisionmaking.	Pennsylvania	Focus Groups	4 focus groups including 41 Medicaid enrolled mental health care consumers in Pennsylvania	Uses of provider information and discussions about the value of information and formatting	Multiple	<p>Themes from focus groups were:</p> <p>Information needs to be easily accessible and updated frequently.</p> <p>More information was desired about provider services such as clinical expertise available.</p> <p>Important aspects of care were shared decision making, and receiving care in a timely manner, particularly flexibility in scheduling.</p> <p>Ability to talk to doctor directly was also important.</p>	Participants say they want information but the specifics cited as important do not always match the quality indicators that are currently available (process indicators)

# Appendix L. Health Plans: Quantitative Evidence

## Section A: Contains columns 1 through 10 of all health plans quantitative studies (L1: L9)

Refid	Author Year QA	1. Study Purpose and/or a priori Hypothesis (if stated)	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design /Type	4. Sample/ Population or Population	5. Primary Comparison	6. All Outcomes Measured	7. Name of Public Report and Description	8. What is it? How is it applied?	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
1845	Abraham 2006 Poor	Examines health plan choices of employees of 16 firms to search for health plan quality information and whether performance information leads to switching plans. such information on the decision to switch plans. N= 651 single employees	Minneapolis-St. Paul Area	Comparison Groups Post test only	Single employees with no dependents and employees eligible for family coverage who were employees of 16 BHCAG (Buyers Health Care Action Group)member firms and had selected Choice Plus as their primary health plan.	None.	INFO: Probability of Information Seeking Behavior SWITCH: Probability of Care system switching.	Performance results Book.	Hirsleifer and Riley model (1979), we assume that an individual chooses one among several alternative health plans based on the plans' certain features, as well as imperfect information about plan quality.		
1550	Bardenheier 2007 Fair	To examine the factors associated with higher childhood immunization rates reported by public reporting and non-public reporting commercial health plans to the NCQA.	USA	Comparison Groups Post test only	All health plans that reported to NCQA from 1999 to 2002. 1999 - Sample Size=423 plans 2000 - 383 Plans 2001 - 371 Plans 2002 - 332 Plans	Intervention: Public Reported Health Plans 1999 - 2002 Comparison: Non-Public reported Health Plans 1999-2002	The proportion of children aged 24 to 35 months in the plan who received 4 doses of diphtheria-tetanus-pertussis vaccine, 3 doses of Haemophilus influenzae type b vaccine, and 3 doses of Hepatitis B vaccine.	HEDIS			
3369	Beaulieu 2002 Fair	To determine if health plan quality information affects health plan choice	Cambridge MA	One Group Pre test Post test	Approximately 11,500 Employees of Harvard University eligible for health benefits in each of the years 1994-1997	Comparing whether an employee switches health plans from 1996 to 1997 and whether this is affected by the quality information about the health plan controlling for other factors including price and tenure in plan prior to this year.	Switching health plans and the probability of selecting a health plan (Dependent variables in regression models).	Plan profiles provided by employer (Harvard)		age and whether choice was for an family or individual policy.	none

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3514	Bost 2001 Poor	to compare health plans that public reported HEDIS for 1996, 97, 98 to plans that did not in terms of HEDIS and CAHPS scores	US	Multiple Groups, Time Series	421 health plans that submitted HEDIS data to NCQA for 1997, 98 and 99.	1. Health plans that allowed their data to be reported for all 3 of the study years are compared to health plans that submitted their data for aggregation but did not allow public reporting. 2. Plans that reported for all 3 years are also compared to plans that publicly reported for the first time in each year. 3. Public reporting and not reporting plans in the top 25% and bottom 75% of CAHPS are compared in terms of their HEDIS measures.	Eight HEDIS measures from the 'effectiveness of care' domain. Includes adolescent immunization, breast cancer screening, cervical cancer screening, prenatal care in 1st trimester, beta-blockers after MI, eye exam for diabetics, follow-up after mental illness hospitalization, and advising smokers to quit.	HEDIS and CAHPS		willingness to allow public release of their performance measures	none
4420	Chernew 1998 Fair	To examine the relationship between consumer's health plan choice and health plan performance ratings.	USA	One Group Post test Only	Employees of a Fortune 100 company that chose single coverage, active and non-union. n=5795	During 1995 enrollment (Fall 1994) employees were given information sheets for each plan. It had the price for each plan and the report card rating information for five domains: 1. Surgical Care 2. Preventive Care 3. Employee Satisfaction 4. Physician quality 5. Medical treatment	Odds of choosing a "superior" quality Health plan	HEDIS	Utility Maximization		



Refid	Author Year QA	1. Study Purpose and/or a priori Hypothesis (if stated)	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design /Type	4. Sample/ Population or Population	5. Primary Comparison	6. All Outcomes Measured	7. Name of Public Report and Description	8. What is it? How is it applied?	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
2620	Chernew 2004 Fair	To understand the association between the plan offerings of large employers, the price of health plans, and observable measures of performance.	USA	One Group, Post Only	855 Employer/MSA combinations	Plans offered by employers vs. not offered by employers. Ns vary.	Plans offered, plans not offered, price of plans, market share	CAHPS and HEDIS		Employers	Plan choices. Not dire consequences, as most employers offer several plans.
875	Dafny 2008 Fair	The study examines the relationship between enrollment and quality before and after report cards were mailed to Medicare beneficiaries in 1999 and 2000. The focus is on separating responses due to learning about quality from other sources from report cares.	USA	Multiple groups Interrupted Time Series	N=8212. The unit of observation is the plan-county-year combination. The Sample includes observations with 10 or more Medicare Enrollees and non missing data for all variables.	Data Trends from 1994 to 2002	Switching into higher quality plans 1. due to other reasons (market learning) 2. due to report cards	One HEDIS measure (mammogram rate) and one CAHPS measure (first communicate, then best care) included in the Medicare and you brochure.	For the report cards to have a discernible effect on behavior, following chain of events have to transpire: 1. beneficiaries must read and comprehend the publications or communicate with someone who has done so. 2. beneficiaries must change their belief about plan quality in response to the reported scores 3. These changes must be of sufficient magnitude to imply a change in the optimal plan for some enrollees 4. Some of these enrollees must take actions to switch to their optimal plan		

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3215	Farley 2002 Good	To assess the effects of CAHPS health plan performance information on plan choices and decision processes by New Jersey Medicaid beneficiaries.	New Jersey	Random Assignment	<p>The study sample was a statewide sample of all new Medicaid cases that were mailed HMO enrollment materials during a four-week period from march 25 to April 15, 1998.</p> <p>The study used state data on HMO enrollments and survey data for a subset of these cases for evaluating self-reported outcomes.</p>	<p>5217 Medicaid Enrollees out of which, 2649 received the CAHPS report, and 2568 did not.</p> <p>Intervention: 66.6% of 2649 responded (1763)</p> <p>Control: 30.6% of 2568 responded (787)</p>	<p>1. Proportion choosing a plan</p> <p>Of those choosing a plan:</p> <p>2. Standardized CAHPS rating of plan selected</p> <p>3. Proportion selecting the dominant HMO</p> <p>4. Standardized CAHPS rating of selected plan, for those not selecting dominant HMO</p> <p>Logistic regression for Choice of the Dominant Medicaid HMO for receptive subjects who read reports and chose a plan with contextual variables:</p>	CAHPS		<p>1. Age 35 or older (OR 0.05**)</p> <p>2. Race (Hispanic or not)(OR 2.77*)</p> <p>3. Self-rated health excellent or very good (OR 0.85)</p> <p>4. Education (Did not complete high school) (OR 2.18*)</p> <p>5. Has and wants to keep usual provider (OR 0.38*)</p> <p>6. Index of Importance of CAHPS dimensions in choice (1-4) (OR 0.51#)</p> <p>7. Previous market share of dominant plan, per 10%age points. (OR 1.46**)</p> <p>#p&lt;0.10</p> <p>*p&lt;0.05</p> <p>**p&lt;0.01. The results with no superscript were not significant.</p>	Health Plans
3228	Farley 2002 Good	To assess the effect of CAHPS information on switching from a default health plan into another plan by Iowan Medicaid beneficiaries.	Iowa	Random Assignment	New beneficiaries of Iowa Medicaid program n=13,077	CAHPS provided compared with No CAHPS information provided	Switching of plan choice	CAHPS		Patient/families	Plan decisions - stay with default or switch to another

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3488	Fox 2001 Poor	The study evaluates the impact of CAHPS report card in assisting newly enrolled Medicaid case heads in selecting a managed care plan.	Kansas	Comparison Groups Post test only	Medicaid population who enrolled in Kansas Medicaid managed care program in May 1998.	Intervention: New Enrollees who received CAHPS report in the mail. n=343 Control: New enrollees who did not receive the CAHPS report along with plan material n=698. Assessed by self reporting.	Ho 1: CAHPS will raise the salience of quality and awareness of health plan differences among Medicaid consumers Ho 2: CAHPS will improve the health plan decision-making process Ho 3: Women who are Medicaid beneficiaries will make informed choices about their plans.	CAHPS`			
1423	Habermann 2007 Fair	To examine the effects of a Medicare policy change and HEDIS measures on stage of breast cancer diagnosis among older women. Only effect of HEDIS measures abstracted as relevant to this review.	8 regions of the US covered by cancer registries (San Francisco-Oakland, Connecticut, Hawaii, New Mexico, Seattle, Atlanta, SNA Jose- Monterey and Los Angeles	Comparison Groups Pre test Post test	30, 857 women aged 65-74 diagnosed with breast cancer from 1994 to 2002.	Compares stage of cancer at diagnosis for women 65-69 (reported in HEDIS) to women 70-75 (non reported in HEDIS	% of women at early stage at diagnosis	HEDIS			

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6518	Hendricks 2009 Poor	Authors examined whether the introduction of managed competition in the Dutch healthcare system along with public reporting of quality information was associated with performance improvement in health plans Ho: The improvements over the years would be more profound for the quality aspects that needed improvement most and for health plans that performed inferior at the first measurement in 2005	The Netherlands	Multiple groups, Post Only	Health Plans. Each Year from 2005-2008 the performance of health plans is assessed annually using standardized CQI. Those results are published on a website and a press release is published. 2005 - 13,819 Respondents 30 Health Plans 2006 - 8266 Respondents 32 Health Plans 2007 - 8088 Respondents 32 Health Plans 2008 - 7183 Respondents 32 Health Plans	Comparison of Years 2005 and 2008.	General Rating, Conduct of Employees, Health Plan Information, Access to Call Centre, Getting the needed help from call centre, Reimbursement of claims, Transparency of (co)payment Requirements	CAHPS version			
1967	Jin 2006 Good	To estimate the impact of public reports of quality on choice of plan by public employees separate from the impact of quality information they can obtain without the report.	86 counties in US	One Group, Post Only	Started with 2 million retirees/surviving family members of employees covered by the Federal Employee Health Benefit Plan from 1995-2000. Narrowed to 86 counties with the greatest number of plans operating at the same time.	Compare the impact of reported quality information on choices to impact of other information (measured by unreported quality information).	The likelihood of plan selection The estimate percentage of people selecting plans under different information conditions Estimates of the dollar value of the information.	HEDIS and CAHPS			
10	Jung 2010 Good	To examine the impact of voluntary information disclosure on quality of care in Health Maintenance Organization (HMO) Markets in the USA.	USA	Multiple Groups, Pre-Post	Commercial HMOs that submitted HEDIS data to NCQA (382 HMOs)	Year 1997 - 2000. 80% of HMOs (Intervention) have more than 2 years of HEDIS data. Depending on year 12-34% of HMOs declined disclosure (Control).	1 HMO-Year is one unit of analysis (i.e. treating an HMO's quality data in a given year as a separate observation (1062 total observations. Clinical Care HEDIS indicators are used to assess quality.	HEDIS			

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4228	Knutson 1998 Fair	Effect of Report card on relative changes in the employees' knowledge of health plan benefits and their ratings of quality and cost attributes, as well as their plan choice, rates of switching plans, and willingness to pay higher premiums	Minnesota	Comparison Groups Pre test Post test	New enrollees of State of Minnesota Employee Groups Insurance Program. N=3,573 interviews total	Intervention: State of Minnesota employees who received report cards vs. University of Minnesota employees who did not receive report cards. (after 1995) They were interviewed pre-enrollment and post-enrollment. Both groups were stratified by single and family coverage and results reported.	1. Change in knowledge of health plan benefits from pre-enrollment to post-enrollment. 2. Change in perceived level of knowledge 3. Change in relative importance of cost and quality health plan attributes. 4. Change in ratings of the quality of employees own plan 5. change in ratings of the quality of others plans. 6. influence on the degree to which switching plans was considered. 7. Influence on employees to switch health plans or stay with their current plan. 8. change in employees' premium contribution.	SEGIS		NA	NA
3406	Lied 2001 Fair	The authors analyzed performance trends from 1996 to 1998 for health plans in the Medicare managed care program.	USA	Time Series Post Only	Health Plans	1996 - 289 Health Plans reporting HEDIS 1997 - 371 Health Plans 1998 - 320 Health plans	Four HEDIS Measures: 1. AAP: Adult Access to Preventive/Ambulatory Health Services. N=167 2. BB: Beta-Blocker Treatment after Heart Attack. N=55 3. BCS: Breast Cancer Screening. N=151 4. EE: Eye Exams for people with Diabetes. N=156	HEDIS			
619	Liu 2009 Fair	To examine whether low-income parents of children enrolled in the New York State Children's Health Insurance Program (SCHIP) chose managed care plans with better quality of care.	New York	Multiple groups, Post Only	New Enrollees (2644) of NY SCHIP	2644 people who enrolled in SCHIP at the end of 2001 or in early 2002. Parents were interviewed during 12-month period.	Choice of child-plan in Managed care (SCHIP)	CAHPS and HEDIS	Assumption is that consumers are rational agents that maximize utilities reflecting preferences across alternatives varying in benefits and costs.	Effect of Education and income of Parents on plan choice for child. Other characteristics include, child race, and prior insurance status	Health Plan for Children

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3553	McCormack 2001 Fair	TO examine the effect of providing new Medicare information materials on consumers' attitude and behavior about health plan choice.	Kansas City	Random Assignment	New Medicare Enrollees and Old beneficiaries of Fall and Winter 1998-99 N= 1,156 experienced beneficiaries (62% response) 951 new beneficiaries (58% response) .	Control Group: No Report Card information (pre release) Three Treatment Groups (post mailing): 1. Medicare & You Handbook (52pg) 2. Medicare & You + 22pg CAHPS 3. Medicare & You Bulletin (8pg)	1. The probability of using the information to choose or change health plans 2. Beneficiaries' level of confidence in their current health plan choice.	CAHPS	Decision making and Cognitive-Aging Theories.		
3356	Pham 2002 Good	To assess whether higher performance by Medicare health plans on quality indicators was associated with withdrawal from Medicare	USA	One Group Post test Only (Retrospective Cohort)	The Unit of analysis was a contract-county unit, as each health plan could be in various counties. Medicare Managed Care plans were active in 2310 contract-county combinations in 1997 and followed for 3 years	Effect of higher quality vs low quality as per HEDIS on risk of withdrawal. N = 2310. Used Kaplan Meier to assess hazard. Stratified by clinical and ambulatory HEDIS measures.	A Contract-County unit was considered to withdraw if the county was absent from every contract active within the plan at time of follow-up. Withdrawal was the outcome.	HEDIS			
4086	Scanlon 1999 Fair	To examine the relationship between both HEDIS-based plan performance ratings and individual HEDIS measures and 1996 health plan enrollment.	A firm in USA	One Group Post test Only	Markets in which at least 10 employee have a choice of plans. Family coverage has N=154 plan/market observations representing the choices of 9,719 employees. For single coverage n=105 observations representing 5,536 employees	All employees were given a fact sheet that included plan ratings. Selection based on these rating was compared to selection based on measures going into these ratings as a way to examine informal sources of information	Probability of selecting a plan rated 'superior' or 'needs improvement' compared to average. Probability of selecting a health plan with a super	HEDIS-based ratings created by employer	The underlying econometric is based on the assumption that employees seek to maximize utility, and the utility derived by each individual, i, from health plan, j, can be expressed as a function of health plan attributes.		
3370	Scanlon 2002 Good	To examine how the release of health plan performance ratings influence employee health plan choice	USA (GM Corporation)	One Group Pre test Post test	GM Employees N=29,000	Pre: 1996 Open Enrollment Post: 1997 Open Enrollment + Report Card	Probability of Choosing a Plan given certain conditions.	GM Report Card + HEDIS			

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6251	Tae-Seale 2004 Fair	The level of consumer satisfaction affects retention in health plans. To find evidence on the link between improvement in consumer satisfaction, distribution of consumer satisfaction information and health plan member retention	USA	One Group Pre test Post test	250 Federal Employee Health Benefit Program(FEHBP) health plans in 1994 and 1995	Intervention: Consumer satisfaction as per the report card Control: Retention Rate (%age of incumbent federal employees who have remained in the plan they were previously enrolled in during open seasons in 1994 and 1995. N=250	Retention Rate	OPM			
3129	Wedig 2002 Fair	To test the hypothesis that consumer report card influence consumer's choice of health plan.	231 counties in 40 US states that are broadly representative of the US based on geography and population density.	One Group Pretest Post Test	Federal employees including new hires and existing employees (4299 in 1995 and 4863 in 1996).	The impact of quality on choice in 1995 when a report card on plans had very limited distribution and in 1996 when it was widely distributed to all employees.	Impact of quality report on choice of health plan	Not named. Report card created by Office of Personnel Management for federal employees.		none	none

**Section B: Contains columns 11 through 19 of all health plans quantitative studies (L10: L27)**

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
1845	Abraham 2006 Poor	None	None	None	INFO: 1. Low Care system Rating - pr(-0.106)* 2. Medium Care system Rating - pr(0.010) 3. Booklet distributed to all - pr(0.124)** 4. Booklet distributed on request - pr(0.252)*** 5. Quality Rating Comparison - pr(-0.064) 6. Understand quality - pr(0.082)* SWITCH: 1. Low Care system Rating - pr(-0.001) 2. Medium Care system Rating - pr(-0.16) 3. Quality Rating Comparison X Predicted INFO - pr(-0.041) 4. Understand quality - pr(-0.023)  *p<0.10 **p<0.05 ***p<0.01	None	None	Authors conclude that results do not support either a link between quality information and switching behavior, or between perceived health plan satisfaction and switching. They find that switching is influenced by changes in premiums and whether an individual has an existing relationship with a health care provider.		Unclear
1550	Bardenheier 2007 Fair	Multivariate model of factors associated with proportion fully immunized:  1. Public Report vs Non-Public Report (keeping everything else constant): Beta Coefficient(SE) 3.2 (1.2) p=0.009 2. With 1999 as reference: 2000 - -2.5(1.1) p=0.02 2001 - 2.3 (1.1) p=0.04 2002 - 0.6 (1.2) p=0.65 (n.s.s.)	None	None	None	None	Multivariate model of factors associated with proportion fully immunized: (contin.) 1. Proportion of African Americans -0.2 (0.1) p=0.01 2. Proportion of Hispanics -0.2 (0.1) p<0.001 3. Proportion of Pacific Islander 0.6(0.1) p<0.001	Plans that reported publicly has higher childhood immunizations rates than plan that did not report publicly (p<0.001) Plans with higher proportions of Hispanics or African Americans has lower childhood immunization rates (p<0.001)		Unclear
3369	Beaulieu 2002 Fair	None	None	None	Lower quality of care rating are associated with switching plans (the coefficient on the quality rating variable is significant p<0.01).  Analyses of the association of several variables found that a one unit increase in the quality rating increased the odds of selecting a plan by 10%. OR 1.105 (coefficient -.110 S.E. 0.015, p<.01). Plan tenure and whether the plan has point of service options (POS) have a stronger impact on odds of selecting a plan.	none	Analyses by type of policy (family or individual) and age revealed families and older individuals have stronger preferences for quality than younger individuals who are most sensitive to price.	Employees were more likely to switch from lower quality plans though the effect is small. Quality played a role in plan choice even after controlling for other factors like price and tenure with plan.		Harvard University and Aetna US Healthcare



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3514	Bost 2001 Poor	For the plans that publicly reported their measures, the rates increase across the 3 years (96, 97, 99). For 3 of the 8 measures the linear trend was significant at $p<0.01$ : adolescent immunization (60.6%, 65.4%, 67.9%, breast cancer screening (73.8%, 74.6%, 76.1%) beta-blockers after MI (70.5%, 82.4%, 85.0%)  Plans that scored in the top 25% on CAHPS had better HEDIS measure rates than plans in the bottom 75% ( $p<0.001$ for all measures).	None	None	None	None	Plans that publicly reported for 3 years had better 1998 mean rates on all HEDIS measures ( $p<0.001$ ) than both those that did not publicly report and those plans that reported in 1998 for the first time.  Plans that publicly reported for 3 years had better 1998 mean rates on 7 of 10 CAHPS measures ( $p<0.01$ ) than both those that did not publicly report and those plans that reported in 1998 for the first time.	Health plans that voluntarily reported for 3 years had better rates on all 8 HEDIS measures and these measures improved with time. Reporting plans also had higher scores for 7 of 10 CAHPS measures. The authors report that the 3 HEDIS measuring in which there was improvement among the plans that publicly reported their results were often the target of QI programs.	no risk adjustment, or any types of controls or sensitivity analyses.	No information provided
4420	Chernew 1998 Fair	None	None	None	Odds Ratios to show relationship between choice of plan and plan attributes for nonunion single choosers: 1. Price 0.92 ( $p=0.2934$ ) 2. Physicians/Members 1.20 ( $p=0.686$ ) 3. Integration 1.11 ( $p=0.6353$ ) 4. Prevention 1.74 ( $p=0.0002$ ) 5. Satisfaction 0.44 ( $p=0.0031$ ) 6. Medical treatment 1.07 ( $p=0.8222$ ) 7. Physician Quality 0.99 ( $p=0.9580$ ) 8. Surgical Care 0.75 ( $p=0.4546$ )	None	None	Authors conclude that the probability of choosing a health plan is inversely related to the out-of-pocket price of the health plan, all else held constant. There was no significant association between ratings and plan choice, although cannot say anything about impact as this is a cross-sectional design.		Blue Cross Blue Shield Association and Finger Lakes Blue Cross Blue Shield

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2620	Chernew 2004 Fair	None	None	None	<p>The sum of the ratings has a mean value of 475 and a standard deviation of 26. At the mean offer probability of 15.2%, the coefficient of 0.010 implies that the offer probability would increase by 3.4 percentage points per 1 standard deviation increase in the sum of CAHPS ratings.</p> <p>Fixed effect logit results: Sum CAHPS variables: 0.021(P&lt;0.01) FEHBP price: -0.01 (P&lt;0.05) More than 10 years old: 1.31 (P&lt;0.01) For profit: -0.582 (P&lt;0.05) %IPA: -0.223 (NS) %Network: 0.852 (P&lt;0.01) %Medicare enrollees: 3.04 (P&lt;0.01) National affiliation: 1.71 (P&lt;0.01) Blue cross blue shield affiliation: -0.515 (P&lt;0.05)</p> <p>A one standard deviation increase in the sum of the ratings is projected to increase the offering probability by about 7.0 percentage points.</p> <p>Similar results using HEDIS measures of quality: Sum HEDIS variables: 0.160 (P&lt;0.01) FEHBP price: -0.012 (P&lt;0.1) More than 10 years old: 1.42 (P&lt;0.01) For profit: -0.729 (P&lt;0.01) %IPA: -0.241 (NS) %Network: 0.649 (P&lt;0.05) %Medicare enrollees: 2.92 (P&lt;0.01) National affiliation: 1.438 (P&lt;0.01) Blue cross blue shield affiliation: -0.632 (P&lt;0.05)</p> <p>CAHPS variables: HMO plan market share within an MSA (Does not include outside coverage): Sum CAHPS variables: 0.009 (P&lt;0.01) FEHBP price: 0.001 (NS) More than 10 years old: 0.038 (NS) For profit: 0.315 (P&lt;0.01) %IPA: -0.170 (NS) %Network: 0.658 (P&lt;0.01) %Medicare enrollees: -0.155 (NS)</p>	None	None	<p>Author's summary: Analysis of the health plan choices of 17 large employers suggests that employers do not preferentially offer plans with poor performance scores. Our results indicate that factors other than plan performance affect the likelihood of a plan being offered as well. We found employers less likely to offer plans with high prices. This finding should be interpreted with some caution. As with our analysis of the performance measures, omitted variables may also influence our estimates regarding the impact of price. Consistently, the analysis suggests that employers prefer plans that are more established, non-profit, and affiliated with national chains. Though not uniform, the bulk of the evidence suggests that employers prefer network model plans and plans with relatively few Medicaid enrollees.</p>		US Department of Labor and AHRQ

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2620	Chernew 2004 Fair Cont.				<p>%Medicaid enrollees: 0.095 (NS) National affiliation: 0.067 (NS) Blue cross blue shield affiliation: 0.261 (P&lt;0.1)HMO plan market share with an MS (includes all non-HMO coverage including uninsured): Sum CAHPS variables: 0.019 (P&lt;0.01) FEHBP price: -0.003 (NS) More than 10 years old: 0.408 (P&lt;0.01) For profit: -0.107 (NS) %IPA: -0.455 (P&lt;0.01) %Network: 0.598 (P&lt;0.01) %Medicare enrollees: -0.049 (NS) %Medicaid enrollees: 0.351 (NS) National affiliation: 0.325 (P&lt;0.05) Blue cross blue shield affiliation: 0.325 (P&lt;0.1)</p> <p>HEDIS variables: HMO plan market share within an MSA (Does not include outside coverage): Sum HEDIS variables: 0.101 (P&lt;0.01) FEHBP price: -0.002 (NS) More than 10 years old: 0.083 (NS) For profit: 0.281 (P&lt;0.05) %IPA: -0.139 (NS) %Network: 0.593 (P&lt;0.01) %Medicare enrollees: -0.295 (NS) %Medicaid enrollees: 0.120 (NS) National affiliation: 0.025 (NS) Blue cross blue shield affiliation: 0.282 (P&lt;0.1)</p> <p>HMO plan market share with an MS (includes all non-HMO coverage including uninsured): Sum HEDIS variables: 0.188 (P&lt;0.01) FEHBP price: -0.004 (NS) More than 10 years old: 0.466 (P&lt;0.01) For profit: -0.074 (NS) %IPA: 0.256 (NS) %Network: 0.470 (P&lt;0.05) %Medicare enrollees: -0.077 (NS) %Medicaid enrollees: 0.265 (NS) National affiliation: 0.117 (NS) Blue cross blue shield affiliation: 0.258 (NS)</p>					

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
875	Dafny 2008 Fair	None	None	None	Medicare enrollees were switching to high quality plans independent of the report cards during the period. A response to the report card is still found controlling for switching already happening. This effect is due to the CAHPS measure not the HEDIS measure. The coefficients on the best-care* post interaction variable are all significant at $p < .05$ or $p < .01$ for the different model specifications (values not given as they are not interpretable). Report cards resulted in swings in market share among HMOs, but only a small amount of switching from traditional Medicare to HMOs. In a simulation, net switching associated with report cards at the end of 2002 was only 1.24% of beneficiaries.	None	The impact of report cards (as well as other trends toward switching) are greatest in markets that have providers of varying quality levels.	None	None	Northwestern University and NBER. Serle Fund for Policy Research.

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
3215	Farley 2002 Good	None	None	None	<p>Format: Mean or Proportion (sample size)</p> <p>All April Enrollees:</p> <p>1. Proportion choosing a plan: Int: 0.68 (2649), Con: 0.69 (2568)</p> <p>2. Standardized CAHPS rating of plan selected: Int: -0.03 (1813), Con: 0.03 (1775)</p> <p>3. Proportion selecting the dominant HMO: Int: 0.28 (1813), Con: 0.27 (1775)</p> <p>3. Standardized CAHPS rating of selected plan, for those not selecting dominant HMO Int: 1.80 (1253), Con: 1.73 (1255)</p> <p>Receptive Subgroup:</p> <p>1. Proportion choosing a plan: Int: 0.95 (334), Con: 0.96 (341)</p> <p>2. Standardized CAHPS rating of plan selected: Int: 0.62# (318), Con: 0.00 (327)</p> <p>3. Proportion selecting the dominant HMO: Int: 0.25# (318), Con: 0.32 (327)</p> <p>3. Standardized CAHPS rating of selected plan, for those not selecting dominant HMO Int: 2.58** (232), Con: 1.81 (226)</p> <p>#p&lt;0.10 *p&lt;0.05 **p&lt;0.01. The results with no superscript were not significant.</p>	None	<p>1. Age 35 or older</p> <p>2. Race (Hispanic or not)</p> <p>3. Self-rated health excellent or very good</p> <p>4. Education (Did not complete high school)</p> <p>5. Has and wants to keep usual provider</p> <p>6. Index of Importance of CAHPS dimensions in choice (1-4)</p> <p>7. Previous market share of dominant plan, per 10%age points.</p>	Authors conclude that for the Medicaid population as a whole, we found no evidence that the CAHPS report reduced auto-assignment rates, influenced plan choices, or modified consumer's perceptions of the enrollment process.		AHRQ

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
3228	Farley 2002 Good	None	None	None	<p>No CAHPS vs. CAHPS Type I counties assigned to high-rated HMO: n=1,717 vs. n=1,693 Stayed on HMO: 84% vs. 85.7% (used as standard for below ORs) Switched to Medi PASS: 13.2% vs. 10.6%; OR 0.80 (95% CI 0.58 to 1.09) Switched to low-rated HMO: 2.7% vs. 3.8%; OR 1.36 (95% CI 0.75 to 2.45)</p> <p>Type I counties assigned to low-rated HMO: n=1,614 vs. n=1,679 Stayed on HMO: 76% vs. 74.7% (used as standard for below ORs) Switched to Medi PASS: 14.1% vs. 14.4%; OR 1.03 (95% CI 0.75 to 1.39) Switched to high-rated HMO: 9.9% vs. 11%; OR 1.13 (95% CI 0.79 to 1.60)</p> <p>Type I counties overall switching from low- to high-rated HMO and vice versa: 10.5% of low-rated HMO participants switched to a high-rated HMO, while only 3.2% of high-rated HMO participants switched to a low-rated HMO (p&lt;0.001)</p> <p>Type II counties assigned to high-rated HMO: n=1,087 vs. n=1,037 Stayed on HMO: 70.5% vs. 71.8% (used as standard for below OR) Switched to Medi PASS: 29.5% vs. 28.2%; OR 0.92 (95% CI 0.68 to 1.24)</p> <p>Type III counties assigned to low-rated HMO: n=2,097 vs. n=2,153 Stayed on HMO: 76.3% vs. 76.4% (used as standard for below OR) Switched to Medi PASS: 23.7% vs. 23.6%; OR 0.99 (95% CI 0.79 to 1.23)</p>	None	None	Public reporting did not have an affect on the health plan choices of new lowan Medicaid participants. However, participants were more likely to switch from a low-rated HMO to a high-rated HMO than from a high- to a low-rated HMO, which is the only statistically significant finding in the report.		Cooperative agreement 5U18HS09204 -05 with RAND

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
3488	Fox 2001 Poor	None	None	None	Result Format for Received CAHPS vs did not receive CAHPS: Odds (p) Ho 1: Ease of judging quality of care (1=easy, 0=not easy) - 2.30 (0.01) Ho 2: Improving Health Plan decision-making (1=somewhat to very easy, 0=not easy) - not reported Ho 3: Making informed choices - 0.70 (0.05) odds of influenced most by nurse or doctor	None	None	Authors suggest that CAHPS is in many respects useful to Medicaid beneficiaries, however this should be one of many approaches for disseminating this information.		unclear
1423	Habermann 2007 Fair	None	Stage at diagnosis (early, late, unstaged) for HMO and Fee for Service Medicare 1998-02 65-69 HMO: 92.0, 6.4, 1.6 70-75 HMO: 91.4, 6.3, 2.3 65-69 FFS: 89.6, 7.7, 2.7 70-75 FFS: 89.2, 7.9, 2.9	None	None	None	None	Lack of difference between age groups in HMO and the persistent of the difference between FFS and HMO across the two age groups suggests there is not crowding out and may be spill over to the older group not included in the HEDIS measure.	Seems like qualitative?	not reported

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
6518	Hendricks 2009 Poor	<p>Managed Competition: General Rating of Health Plan: 2005 - Mean (7.53) chi- square indicating the change over years (Linear 10.68)** (Quadratic 33.67)*** 2006 - Mean (7.66) 2007 - Mean (7.75) 2008 - Mean (7.66) Conduct of Employees: 2005 - Mean (3.50) chi- square indicating the change over years (Linear 19.62)*** (Quadratic 0.19) 2006 - Mean (3.52) 2007 - Mean (3.57) 2008 - Mean (3.58) Health Plan Information 2005 - Mean (2.63) chi- square indicating the change over years (Linear 15.56)*** (Quadratic 12.37)*** 2006 - Mean (2.70) 2007 - Mean (2.72) 2008 - Mean (2.71) Access to Call Center 2005 - Mean (2.56) chi- square indicating the change over years (Linear 10.59)** (Quadratic 20.81)*** 2006 - Mean (2.36) 2007 - Mean (2.59) 2008 - Mean (2.60) Getting the needed help from call center 2005 - Mean (3.40) chi- square indicating the change over years (Linear 0.98) (Quadratic 5.04)* 2006 - Mean (3.28) 2007 - Mean (3.41) 2008 - Mean (3.38) Reimbursement of claims 2005 - Mean (3.67) chi- square indicating the change over years (Linear 1.27) (Quadratic 4.50)* 2006 - Mean (3.60) 2007 - Mean (3.68) 2008 - Mean (3.67) Transparency of (co)payment Requirements 2005 - Mean (2.68) chi- square indicating the change over years (Linear 7.35)** (Quadratic 6.33)* 2006 - Mean (2.68) 2007 - Mean (2.67) 2008 - Mean (2.79) *p&lt;0.05, **p&lt;0.01, ***p&lt;0.001</p>	None	None	None	None	None	On Most (six out of seven) aspects the performance of below-average scoring health plans increased more than the performance of average and/or above-average scoring health plans. The Hypothesis was confirmed.	Doubtful about the Intervention . Managed Competition or Public Report?	Netherlands Institute for Health Services Research (NIVEL)



Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
6518	Hendricks 2009 Poor Cont.	Effect of Public reporting: General Rating of Health Plan: Below Average in 2005- 2005 - Mean (7.30) chi- square (17.60)*** 2008 - Mean (7.52) Average in 2005- 2005 - Mean (7.53) chi- square (0.02) 2008 - Mean (7.51) Above Average in 2005- 2005 - Mean (7.90) chi- square (0.11) 2008 - Mean (7.88) Conduct of Employees: Below Average in 2005- 2005 - Mean (3.34) chi- square (15.38)*** 2008 - Mean (3.52) Average in 2005- 2005 - Mean (3.49) chi- square (5.55)* 2008 - Mean (3.55) Above Average in 2005- 2005 - Mean (3.65) chi- square (0.64) 2008 - Mean (3.67) Health Plan Information Below Average in 2005- 2005 - Mean (2.54) chi- square (16.96)*** 2008 - Mean (2.71) Average in 2005- 2005 - Mean (2.61) chi- square (22.61)*** 2008 - Mean (2.72) Above Average in 2005- 2005 - Mean (2.75) chi- square (0.05) 2008 - Mean (2.75) Access to Call Center Below Average in 2005- 2005 - Mean (2.26) chi- square (4.26)* 2008 - Mean (2.40)								

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
6518	Hendricks 2009 Poor Cont.	<p>Average in 2005- 2005 - Mean (2.53) chi- square (0.70) 2008 - Mean (2.58) Above Average in 2005- 2005 - Mean (2.75) chi- square (0.29) 2008 - Mean (2.72) Getting the needed help from call center Below Average in 2005- 2005 - Mean (3.13) chi- square (1.43) 2008 - Mean (3.23) Average in 2005- 2005 - Mean (3.37) chi- square (0.49) 2008 - Mean (3.34) Above Average in 2005- 2005 - Mean (3.60) chi- square (1.03) 2008 - Mean (3.54) Reimbursement of claims Below Average in 2005- 2005 - Mean (3.51) chi- square (16.53)** 2008 - Mean (3.65) Average in 2005- 2005 - Mean (3.68) chi- square (1.01) 2008 - Mean (3.64) Above Average in 2005- 2005 - Mean (3.79) chi- square (9.19)** 2008 - Mean (3.70) Transparency of (co)payment Requirements Below Average in 2005- 2005 - Mean (2.49) chi- square (3.89)* 2008 - Mean (2.65) Average in 2005- 2005 - Mean (2.63) chi- square (5.80)* 2008 - Mean (2.75) Above Average in 2005- 2005 - Mean (2.95) chi- square (1.81) 2008 - Mean (3.05)</p>								

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
1967	Jin 2006 Good	None	None	None	<p>Few people switch plans in general and this is confirmed in the models where coefficients on a 'switch indicator' are large and negative indicating most people do not switch plans. 99.3% of enrollment choices would have been the same with or without the information.</p> <p>In the final model the coefficient on the public information is greater than that on unpublished information. This positive difference is significant and suggests that published scores have a meaningful impact on choice. A one standard deviation increase in reported score would increase likelihood of choice of the plan by 2.63 percentage points.</p>	None	None	Publicized ratings have a direct impact on choice even though few people change and they seem to provide information above and beyond what is available from other sources.		University of MD
10	Jung 2010 Good	Yes. The disclosure variable (public reporting) has significant and positive effects on quality. Public reporting was associated with an increase of 0.40 (95%CI 0.26,0.53) composite score units (p<0.001). Refer to Table 3 in the paper for all the coefficients.	High quality plans in markets with high mortality rates from CVD/DM tended not to disclose.	None	None	None	None	The analysis found positive effects of disclosure on HMO quality. However effect of disclosure on quality depends on type of services.	The author used two methods to calculate the effect. The OLD and the Treatment effect model. The Trtment effect model showed a larger positive effect of PR on Quality because it takes into account "opposite effects" on quality which are omitted in the OLS method.	Department of Health Policy and Administration. Pennsylvania State University

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
4228	Knutson 1998 Fair	None	None	None	Outcome 1: No significant difference between Intervention and Control group (summary statistic not shown). Outcome 2: Significant difference seen (Chi-square 8.5 p<0.05) for single coverage employees but not for family coverage. Outcome 3: No difference in single coverage but significant results in family coverage comparisons (chi-square 7.7, p<0.05). Multivariate analysis (including patient characteristics) resulted in OR 1.11 CI 0.79,1.58 for cost rating and OR1.02, CI 0.60,1.74 for quality. Outcome 4/5: No significant difference between intervention and control (data not reported) Outcome 6: bivariate analysis in single family resulted in significant results (chi-square 8.64, p=0.034) but multivariate analysis resulted in no significant results. Outcome 7: Single coverage intervention group switched more frequently than control p<0.05. family coverage showed no significant results Outcome 8: No significant difference.	None	None	The author concludes No significant Influence of Report cards on Employees.	A roundabout way of detecting something simple. A poorly conducted study so the results may not be true. Note from Annette...not sure I understand this assessment	HCFA
3406	Lied 2001 Fair	1. AAP: Mean 96/97/98 - 84.90, 87.43, 88.55 t-test - 96vs97 2.0*, 97vs98 1.77, 96vs98 2.90* 2. BB: Mean 96/97/98 - 60.38, 78.52, 85.14 t-test - 96vs97 7.76*, 97vs98 4.33*, 96vs98 11.16* 3. BCS: Mean 96/97/98 - 72.08, 72.73, 85.14 t-test - 96vs97 1.02 97vs98 4.24*, 96vs98 4.14* 4. EE: Mean 96/97/98 - 52.86, 52.55, 55.72 t-test - 96vs97 -0.27, 97vs98 3.52*, 96vs98 2.37*  *p<0.05	None	None	None	None	None	Authors found that there were statistically significant improvements for three of the four selected HEDIS measures between 1997 and 1998 (BB,BCS,EE). Mean rate for AAP improved from 1996 to 1998.		CMS

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
619	Liu 2009 Fair	None	None	None	One unit increase in weighted HEDIS score increased the choice factor by 0.05% ( $p>0.10$ ). One unit increase in weighted CAHPS score increased the choice factor by 2.5% ( $P=0.000$ ). the effect of CAHPS on choice probability where there were Children with special needs increased by 0.35%.	None	Interaction terms of parent education and HEDIS & CAHPS resulted in no significant results. In fact parents with higher education were less likely to have an impact of quality on plan choice. - 0.008 ( $p=0.693$ ) for HEDIS and -0.436 ( $p=0.993$ ). However these were just to see if family characteristics confounded the quality-choice relationship and that turned out to be no. Interaction term of parent income resulted in a positive association with no significant result. 0.000 ( $p=0.47$ ) for HEDIS and 0.028 ( $p=0.406$ ) for CAHPS.	Authors found a positive association between CAHPS and plan choice. Individuals with special care needs valued quality more than without. Low-income parents in NY SCHIP choose managed care plans with better quality for children.	Authors cannot conclude anything about income/education's effect on choice, based on the results shown. They have used interaction terms that only tells us that there is no confounding due to these factors.	

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
3553	McCormack 2001 Fair	None	None	None	<p>Beneficiaries who used materials to choose or change plans:</p> <p>1. Experience Beneficiaries Used information to choose or change plans: Control Group 7.0% Treatment Group 5.6% Used the information when considering changing plans: Control Group 19.8% Treatment Group 18.4% Did not use the information to choose or change plans: Control Group 73.2% Treatment Group 76%</p> <p>2. New Beneficiaries Used information to choose or change plans: Control Group 49.6% Treatment Group 27.3%*** Used the information when considering changing plans: Control Group 10.4% Treatment Group 15.4% Did not use the information to choose or change plans: Control Group 40.0% Treatment Group 57.3%</p> <p>Level of Confidence in Current Plan Choice:</p> <p>1. Experienced Beneficiaries Not at all confident: Control Group 7.0% Treatment Group 3.3%*** Somewhat confidence: Control Group 24.9% Treatment Group 23.7% Very Confident: Control Group 51.9% Treatment Group 47.6% Extremely Confident: Control Group 16.2% Treatment Group 25.5%</p> <p>2. New Beneficiaries Not at all confident: Control Group 9.5% Treatment Group 7.1% Somewhat confidence: Control Group 40.8% Treatment Group 35.5% Very Confident: Control Group 32.3% Treatment Group 38.1% Extremely Confident: Control Group 17.4% Treatment Group 19.4%</p> <p>***p&lt;0.01</p>	None	None	Results conclude that the new consumer information materials are having some influence on Medicare beneficiaries' attitudes and behaviors about health plan decision making. The effects on confidence and health plan switching did not vary across the different treatment materials.		HCFA and AHRQ

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
3356	Pham 2002 Good	None	Kaplan Meier: Clinical HEDIS Measures: Annual rate of withdrawal for high quality was 4% vs 20% for low quality. (IRR: 0.21; 95%CI 0.13- 0.32). Ambulatory HEDIS Measures: 10% for high quality vs 16% for low quality (IRR: 0.63, 95%CI 0.48-0.82) Cox Regression (Multivariate ): Clinical (Adjusted for confounders ): All low vs All high HR=0.19 (0.08-0.43) i.e. significant. Ambulatory (Adjusted): All low vs All high HR=0.57 (0.30-1.08) i.e. not significant.	None	None	None	None	Authors found that plan contracts with higher baseline performance on HEDIS quality indicators were less likely to withdraw from Medicare, independent of the payment rates they received. The association between clinical quality measures and withdrawal appears strong, graded and significant.	Took care of the Confounder s really well. Well done study.	Robert Wood Johnson Clinical Scholars Program and BJHSPH

Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
4086	Scanlon 1999 Fair	None	None	None	If ratings impacted plan selection the coefficients for the superior or needs improvement rating would be significant (indicating difference from average) and positive for superior and negative for needs improvement. Preventive Care: neither significant at $p < .05$ Satisfaction: neither significant at $p < .05$ Medical Treatment: neither significant at $p < .05$ Physician Quality: neither significant at $p < .05$ Surgical care: Superior significant at $p, .001$ but sign in opposite direction (negative); need improvement not significant	None	None	Analysis suggests that ratings did not have a major influence on plan enrollment at a large firm in 1996. A second analyses seems to support the idea that information obtained from informal channels offsets the reported ratings.		Society of Actuaries
3370	Scanlon 2002 Good	None	None	None	Of the 12 estimated coefficients on the superior or below average ratings, only seven are of the hypothesized sign (+/-). Of the six domains of performance, only one, women's health, has a positive estimated coefficient on the superior rating and a negative estimated coefficient on the below average rating. Neither of those estimated coefficients is statistically significant. The hypothesis that ALL ratings coefficients equal 0 can be rejected at $p < 0.01$ .	None	None			AHRQ



Refid	Author Year QA	11. Results: KQ1: (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Notes	19. Funder of Research/ Report Article
6251	Tae-Seale 2004 Fair	None	None	None	<p>Difference between 1994 and 1995:</p> <p>1. Retention Rate: 1994: 95.68; 1995: 91.54 (<math>p &lt; 0.01</math>)</p> <p>2. %Extremely Satisfied: 1994: 18.47 1995: 18.05 (<math>p &lt; 0.05</math>)</p> <p>RESULTS: Predicted Satisfaction is associated with higher retention rate: 0.411 (<math>p &lt; 0.01</math>). The number of rival plans have a negative effect on retention rate -0.18, (<math>p &lt; 0.01</math>). Another model is used to include an interaction term (address confounding) of predicted satisfaction X dummy variable for Year. This addresses the effect of free distribution of consumer satisfaction information. The association of predicted satisfaction and retention rate increases in this case to 0.57 (<math>p &lt; 0.01</math>). The rival plans still have similar negative effect on retention rate.</p>	None	None	Authors conclude that examining a plan's ability to retain members (vs switching as shown in other studies), higher consumer satisfaction can boost member retention.	Statistically intensive, they take care of several confounding factors.	Not mentioned
3129	Wedig 2002 Fair	None	None	None	<p>Models of the choice of health plan for 1995 find little evidence that consumers used quality information in the selection of plans (the coefficient on the quality rating was not significant). In the model of the 1996 choices the biggest difference is that the coefficient for the widely disseminated report card rating is highly significant for new and existing public employees. Specifically the regression model finds that a 1 standard deviation increase in the quality score results increases the likelihood of plan selection by more than 50%. In the 1996 The odd ratio (probably of plan choice given quality score is mean plus one SD) for the quality score is 1.57 for new hires and 1.21 for existing employees</p>	None	None	The quality report based on employee survey data influenced selection of plan controlling for premiums, out of pocket costs and service coverage. The impact is stronger on new employees but is also evident for existing employees.		Indiana Hospital and Health Association for one author

# Appendix M. Health Plans: Qualitative Evidence

## Section A: Contains columns 1 through 8 of all health plans qualitative studies (M1: M18)

Refid	Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/ Type	4. Sample/ Population Procedure	5. Outcomes	6. Name of Public Report	7. Results	8. Summary
6560	Damman 2009	To understand how consumers process and evaluate comparative healthcare information available on the internet	USA	Interviews	20 people of 157 members of a Dutch health plan enrollees panel invited to participate who lived within 45 minutes of the interview location	no a priori outcomes. Themes extracted based on interviewee comments	1. website with quality of hospital care for hip surgery 2. information on quality of health plans 3. information on quality and premiums of health plans	12 themes Design 1. amount of information--too much 2. information complexity and organization---often difficult to follow 3. usability of website--not clear what is clickable, vertical text hard to read 4. appearance of information--messy or clean Content 5. importance of quality indicators 6. interpretation of information--difficulty with bar charts and symbols 7. comparison of information to their own experience and ideas--often experience did not match the ratings 8. quality of the presented information--questions about how many and who answered Use of information 9. potential use in daily life--interest in using the quality information varied 10. different decision strategies --task of choosing was perceived as difficult and requiring other information Purpose of information 11. Direct purpose of the information---most related information to consumer choice 12. Purpose of different quality indicators	Key finding include the tension between the large amount of information consumers say is important and how rarely this is incorporated in decisions. What is important changed during the interview suggesting this is not as predictable as assumed. Contradictory information was hard to process. Overall recommendations are to identify the minimum sets of information needed and make these readable.

Refid	Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/ Type	4. Sample/ Population Procedure	5. Outcomes	6. Name of Public Report	7. Results	8. Summary
3311	Farley-Short 2002	To examine similarities and differences across people with different health care insurance in terms of the reasons for choosing health plans and perceptions and use of CAHPS reports	CAHPS demonstrations in Kansas, Oregon, Washington, Pennsylvania and Iowa	Descriptive Survey	<p>Private Insurance, Medicaid, Medicare</p> <p>a. KS b. OR c. WA d. PA e. IA f. NJ g. KS h. KS</p> <p>Sampled a. 1,239 b. 1,260 c. 2,508 d. 750 e. 3,880 f. 2,550 g. 4,682 h. 3,505</p> <p>Responded a. 1,085 b. 931 c. 1,525 d. 517 e. 1,864 f. 1,098 g. 1,095 h. 2,107</p> <p>Response rate a. 88% b. 73% c. 61% d. 71% e. 48% f. 43% g. 23% h. 60%</p>	Ease of Use Time spent on report Recall receiving report	CAHPS	<p>Privately Insured, Medicaid</p> <p>a. Kansas b. Oregon c. Iowa d. Washington e. New Jersey</p> <p>Percentage (SE) Received report a. 29 (1.7) b. 47 (1.9) c. 26 (1.9) d. NA e. 44 (1.8)</p> <p>Don't know a. 3 b. 23 c. 27 d. NA e. 12</p> <p>Received and looked at report a. 25 (1.6) b. 43 (1.9) c. 24 (1.2) d. 77 (2.6) e. 43 (1.8)</p> <p>Don't know a. 3 b. 0 c. 1 d. 10 e. 0</p> <p>NA: not applicable</p>	Many thought the report was easy to understand and readers most commonly spent 15 to 30 minutes on the CAHPS report. Between 10 and 40% of people surveyed say CAHPS had a lot of influence on their choice. Fewer than half of the intended audience received and remembered the CAHPS report. There are important differences across types of insurance suggesting report cards should be more targeted.

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3311 (contd)	Farley-Short 2002 Cont.							<p>Private insurance, Medicaid, Medicare</p> <p>a. KS b. OR c. IA d. WA e. NJ f. KS g. KS</p> <p>How much did report influence choice % (SE)</p> <p>A lot</p> <p>a. 12 (2.5) b. 33 (2.7) c. 9 (2.6) d. 13 (2.1) e. 39 (2.8) f. 40 (2.9) g. 17 (2.0)</p> <p>A little</p> <p>a. 34 (3.6) b. 33 (2.7) c. 39 (4.4) d. 37 (3.4) e. 46 (2.8) f. 33 (2.8) g. 21 (2.1)</p> <p>Not at all</p> <p>a. 55 (3.8) b. 34 (2.7) c. 52 (4.5) d. 50 (3.6) e. 15 (2.0) f. 27 (2.6) g. 61 (2.6)</p> <p>Never switched/chose</p> <p>a. no data b. no data c. NA d. NA e. NA f. NA g. 1 (0.6)</p>	

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4769	Gibbs 1996	To develop prototype materials containing plan choice information, identified what different consumer groups considered important in choice of health plan. It also explored several factors that may limit consumers' acceptance of, understanding of, and willingness to use QIs and other measures	Selected cities and towns (Minneapolis, MN; Los Angeles, CA, Portland, OR; Albany, OR, Yucca Valley, CA; Virginia, MN; Jacksonville, FL, Raleigh, NC	Focus Groups	22 Focus groups, 10 with Medicare beneficiaries; 6 with Medicaid enrollees, 6 with privately insured. Limited to people who had a choice among plans.	Dimension of plans; decision process; comparative information for choice, assessing likely costs, credible information, problems encountered with plans.	NA	Participants expressed a desire for comparative information, but discuss revealed barriers to use in choosing a health plan: Perception that information is persuasive (marketing) rather than informative Questions about how the data are collected Interpretation of ratings: prefer indications that identify plans that are clearly outstanding or inferior Lack of understanding of indicators and how health plans might influence these View indicators in terms of their specific needs, not as indicators of overall quality Find consumer satisfaction numbers meaningful but questions whether they are too subjective.	Consumers across all insurance groups express a desire for comparative information, but presentation is important to understanding and people want information customized to their health priorities.
3556	Goldstein 2001	To assess what CAHPS measures are most meaningful to Medicare beneficiaries, how they are interpreted and how	USA	Focus Groups	3 focus groups with beneficiaries and 3 with SHIP counselors (9-10 people in each group) in MD, CA and NC as well as 12 cognitive interviews with beneficiaries in MD and MA 112 mall intercept surveys in NY, Tallahassee, Chicago, Denver, and LA.	Importance of different domains Preference for different formats	CAHPS	Most important measures: getting the care you need, getting care quickly, assess to specialists and doctors who communicate well. Least important: customer service and office staff Participants liked how the start format looked but were confused about what they meant and found bar charts easier to read. In the second round people were confused by the series of bar charts.  In mall intercept interviews (n=122) 71% of people chose having doctors who communicate well over getting care quickly for a single measure.	Studies demonstrate the many challenges to be overcome in presenting quality information to Medicare beneficiaries in a way that is understandable and useful.

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3878	Guadagnoli 2000	To evaluate CAHPS in Washington State.	Washington state	Descriptive Survey	Jun-Aug 1997 1,182 enrollees from the 3 largest health plans before open-enrollment. 65% response rate Dec 1997 - Mar 1998 N=2,392 following open enrollment from 3 largest plans as well as from plan that was discontinued and plans with lowest ratings 64% response rate	Awareness of CAHPS report	CAHPS	<p>Largest Plans N = 585*; 1997 Not Available in 1998 N = 389*; 1997 Plan Rated One Star N = 237* ; p</p> <p>* Number who saw the CAHPS quality report</p> <p>Reaction:</p> <p>Easy or very easy to understand 60% 54% 54% .12</p> <p>All or most of the information needed to evaluate plans available 65 53 65 &lt; .001</p> <p>Easy or very easy to compare plans 55 42 48 &lt; .001</p> <p>Very or somewhat helpful to learning about differences in quality 75 71 70 .25</p> <p>Very or somewhat helpful to deciding whether to stay with a plan or switch 76 NA 75 &gt; .05</p> <p>Trust the ratings a lot 43 36 38 .08</p> <p>Ratings reflect very well or fairly well the experiences of current health plan members 90 80 85 &lt; .001</p> <p>Ratings tell a lot about the care received from a plan 31 22 33 &lt; .01</p> <p>Ratings are about the same as own opinion about quality of plans 59 42 46 &lt; .001</p> <p>Largest Plans N = 739; 1997 Not Available in 1998 N = 444; 1997 Plan Rated One Star N = 308</p> <p>Most Useful Source</p> <p>CAHPS printed report 30% 25% 29%</p> <p>CAHPS Internet report 1 1 2</p> <p>Benefits fair 15 16 16</p> <p>Non-CAHPS printed materials supplied by employer 8 9 11</p> <p>Materials supplied by health plans 6 11 6</p> <p>Co-workers 15 14 13</p> <p>Friends or family members 9 7 6</p> <p>Newspaper or magazine articles 2 1 2</p> <p>Other 14 16 15</p>	Early large-scale evaluation that is generally positive. Most people report seeing the CAHPS ratings and those who used it were more likely to switch plans and be confident they picked the right plan for their situation. Very few accessed the web page.

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3261	Harris 2002	To investigate the impact of quality information on the willingness of consumers to enroll in health plans that restrict provider access	Los Angeles CA area	Lab-Type Experiment	<p>The experiment was administered in Spring 2000 to 206 adults between ages 25-64 in the Los Angeles metropolitan area who had private insurance obtained through an employer or purchased individually.</p> <p>The Impact of different types of quality information on consumers' hypothetical willingness to enroll in health plans with restrictive provider networks.</p>	<p>206 Adults</p> <p>Three arms:</p> <ol style="list-style-type: none"> <li>1. Network Features + No quality information</li> <li>2. Network Features + Expert-Assessed Quality</li> <li>3. Network Features + CAHPS</li> </ol>	CAHPS	<p>Modeling results find that both expert and consumer assess quality reduce the magnitude of the impact of network features on the choice. The raw coefficients use different scales in the different models so the results cannot be used to directly compare the impact of expert vs. consumer assess quality. That is done through simulations.</p> <p>The overall conclusion is that quality information reduces the impact of changes in network features on the probability of choosing a plan with more options by 1/2 to 1/3.</p> <p>All quality ratings except satisfaction with results of care are less important than access to specialists or having own MD in network.</p>	<p>The impact of quality information depends more on the actual measure the whether it is expert or consumer assessed.</p> <p>Extremely satisfied with care has the largest impact (19.6 percentage points increase in the probability of enrollment) and percent of doctors with university affiliation has the smallest (4 percentage points increase). Two other expert assess and two other consumer assess all result in about an 8 percentage point increase.</p>
3557	Harris-Koejetin 2000	This article discusses lessons learned from consumer testing to create consumer plan choice materials.	Portland OR, Washington DC Metro Area, Baltimore MD, Raleigh/Durham, NC, Wichita and Kansas City.	Focus Groups Interviews	N=258; 52 Medicaid, 125 Medicare, and 90 private insurance	<p>FGD:</p> <ol style="list-style-type: none"> <li>1. Overall Impressions</li> <li>2. Understand Purpose and Intent</li> <li>3. Usefulness</li> <li>4. Problematic Aspects.</li> </ol> <p>Cognitive Interviews:</p> <ol style="list-style-type: none"> <li>1. Content</li> <li>2. Comprehension</li> <li>3. Navigation</li> <li>4. Decision Process</li> </ol>	CAHPS	<p>Reports should be:</p> <ol style="list-style-type: none"> <li>1. short, clear and easy to use</li> <li>2. address diversity among the target audience in terms of education, literacy, health needs, interest</li> <li>3. help consumers understand key fundamentals the choice</li> <li>4. assist consumers to determine and differentiate among their preferences</li> <li>5. minimize cognitive complexity by breaking task into steps</li> <li>6. help consumers understand how and why to use quality information</li> <li>7. realize more information is not necessarily better</li> </ol>	<p>Several lessons emerge and while they may be obvious, literature in health care frequently does not incorporate these.</p>

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3407	Harris-Kojetin 2001	To elicit impressions of a pilot version of the Medicare and You 1999 handbook and CAHPS Survey report	Kansas City, Kansas and Kansas City, Missouri	Focus Groups	56 participants in 7 FGDs with Medicare beneficiaries. Two groups were with age 65 (new), three were age 66-85y and the rest were Medicare eligible due to disability.	1. Overall Impressions 2. Understanding the purpose and intent of CAHPS 3. Usefulness of CAHPS and how would they use it. 4. Trust in the information 5. Problematic aspects	CAHPS	<p>1. Overall Impressions Positive. Short easy to read booklet that are good starting points for decision-making.</p> <p>2. Understanding the purpose and intent of CAHPS High School Graduate or Less: Very Hard - 1 (6%) Somewhat Hard - 5 (29%) Somewhat easy - 6 (35%) Very easy - 5 (29%) At Least Some College Very Hard - 0 Somewhat Hard - 1 (3%) Somewhat easy - 16 (53%) Very easy - 13 (43%)</p> <p>3. Usefulness of CAHPS and how would they use it. I. Primarily useful for people considering or choosing an HMO. Some new beneficiaries said they would have chosen a different plan had they known of this document. II. Found these two things about REPORT FEATURE particularly useful: a). Two-page section on "Things to Think about" that guides the reader through the process of comparing plans using CAHPS data. b). Four page worksheet. III. Found these useful about the REPORT CONTENT: a). Shows differences in quality among plans b). Valuable to be able to see the opinions that other beneficiaries have of the Medicare HMO. IV. Increase utility by including beneficiary costs.</p> <p>4. Trust in the information Somewhat Less trust in CAHPS. Trust level varied significantly with beneficiary education, with lower educated beneficiaries being more skeptical about the survey report than higher education beneficiaries. At Least Some College: Trust a Lot - 50% Not At all - 0% High School Graduate or Less Trust a Lot - 28% Not At all - 18% They thought that the report for "pushing HMOs" because only Medicare HMOs were shown. The report should mention that beneficiaries do not need to enroll in an HMO. Some beneficiaries had general skepticism about surveys and the related statistical issues. But regardless of education level, they said they trusted CAHPS more than information from individual health plans.</p> <p>5. Problematic aspects Some special needs participants were confused/frustrated with lack of clarity about their eligibility as they were not over the age of 65.</p>	



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4682	Hibbard 1997	To assess the relationship between how important information included in quality indicators is and how well it is understood by consumers	Eugene/Springfield OR	Focus Groups Descriptive Survey	NOTE: SAME AS JEWETT 1996 AND HIBBARD 1996  15 Focus group (5 each for Medicaid, private insurance and uninsured) with a total of 104 participants	Importance of indicators in selecting a plan Comprehension Association between comprehension and importance	items from CAHPS and HEDIS	<p>Indicators in order of importance for selecting a plan:</p> <ol style="list-style-type: none"> <li>1. Patient ratings (PR) of overall quality</li> <li>2. PR of doctor communication</li> <li>3. PR of respect given patients</li> <li>4. PR of satisfaction with time spent with doctor</li> <li>5. Rates of immunizations among children under age two</li> <li>6. Rates of cervical cancer screening</li> <li>7. Hospital-acquired infection rates</li> <li>8. Rates of postsurgery complications</li> <li>9. Professional organization disciplinary actions</li> <li>10. Rates of mammograms</li> <li>11. Rates of cholesterol screening</li> <li>12. Rates of eye exams among diabetics</li> <li>13. Malpractice judgments</li> <li>14. Hospital death rates after a heart attack</li> <li>15. Disenrollment rates</li> <li>16. Rates of low-birthweight infants</li> <li>17. Pediatric asthma hospitalization rates</li> </ol> <p>Comprehension and Importance Ave. importance rating, importance rank, % of low comprehension comments, comprehension rank Patient ratings 4.21 1 8.7% 1 Desirable event indicators 3.83 2 21.8% 3 Disciplinary actions 3.75 3 13.4% 2 Undesirable event indicators 3.37 4 41.0% 4</p>	<p>Patient ratings of quality and satisfaction were viewed as most important to decision as well as providing the most information about aspects of care, except prevention. Information that people understand is considered important; if people don't understand, it is dismissed as unimportant.</p>

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3358	Hibbard 2002	To empirically examine some of the key assumptions about how disseminating CAHPS report cards may influence employee knowledge, attitudes and choice.	Portland, OR Metro Area	Lab-type Experiment	Large Private employer with two campuses geographically separated but demographically similar	Three Outcome Variables: 1. Perceived Information Availability index: 7-item summated index about info on 7 CAHPS reporting categories. 2. Importance of CAHPS categories: 5-item index. 3. Materials influence Choice: Single item i.e. how much did the information that employer gave you influence which plan you chose?	CAHPS	1. Perceived info Availability index (0-21 M=7.8) Int 8.4 and Con 6.8 (p<0.001) 2. CAHPS Importance Index (0-15 M=9.2) Int 8.9 and Con 9.0 (NS.) 3. Info influenced decision (%some or a lot) Int 52.0 and Con 52.4 (NS.)	The findings indicate that exposure to the intervention is related to having more information on how well the different plans perform on the CAHPS reporting categories. They further indicate that those who saw the report perceived the CAHPS reporting categories to be more important in health plan choice than those not seeing the report. Finally those who saw the report were more influenced by information sent by their employer than those who did not see the CAHPS report. These hypotheses are not confirmed for the intervention group but it is for those who said they were exposed. (28% control group said they were exposed to PR whereas 52% in Intervention group said they were exposed i.e. flaw in the experimental design)
6465	Hibbard 1996	To explore what consumers want for making choices and how they will use the information	Eugene/Springfield OR	Focus Groups Descriptive Survey	NOTE: SAME AS JEWETT 1996 AND HIBBARD 1997  15 Focus group (5 each for Medicaid, private insurance and uninsured) with a total of 104 participants	Importance of domain Relative impact on choosing	items from CAHPS and HEDIS	Results not repeated that are in Hibbard 1997 What consumers indicated was important (all, private insurance, uninsured, Medicaid) % of respondents Chose from all 4 categories 51.0, 63.9, 41.7, 46.9 Majority of choices from patient ratings 21.1., 16.6, 25.5, 21.9 from desirable events 25, 16.6, 30.5, 28.1 from disciplinary actions 18.3, 22.2, 8.3, 2.5  Which Health Plan Selected: Private Insurance, Uninsured, Medicaid Plan A: better on desirable events, less well on undesirable events 33.3, 27.8, 25.7 Plan B: better on undesirable events, less well on desirable events 66.7, 72.2, 74.3	Consumers have a preference for desirable events and patient ratings. But when asked to choose from 2 plans, the plan that did better on undesirable events was chosen. The reason given was that they give priority to aspects of care outside their control that could have dire consequences.

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3814	Hibbard 2000	To test the effect of a)presenting information in terms of possible risks or benefits and b) presenting more explanatory information on aspects of health plan choice	Washington DC and Research Triangle NC	Lab-type Experiment	207 Volunteers between 18 ad 64 years old with employer-sponsored health insurance	Comprehension Relative importance of CAHPS data in choice Willingness to make trade-offs for quality	altered CAHPS data	Risk-message group had better comprehension then benefits-message group ( $p<.01$ ) No added explanatory information group had better comprehension that added information group --contrary to hypothesis The group with the risk-message and no added information place the highest importance on CAHPS information In the higher income group people receiving the risk message were willing to trade off higher premiums, less convenience, and access to current doctor for higher quality. There was no difference for lower income participants.	Framing reports using a risk message increases comprehension and value to consumer. Willingness to tradeoff other features for quality is only evident in higher income. Additional explanatory information had an unanticipated negative effect on comprehension.
3469	Hibbard 2001  when table is together check that another study with same data is not included. she cites Hibbard 2001 Health Affairs.	To determine whether there are approaches to reporting comparative information that make it easier for consumers to understand.	Eugene/Springfield OR	Lab-type Experiment	253 elderly Medicare beneficiaries and 239 non elderly adults	Comprehension scores	NA	Overall comprehension The Medicare group made almost 3 times as many errors as the non elderly (25% error rate vs. 9%) Format tests Use of stars and bar charts improved the % answering correctly in the Medicare sample compared to bar charts(24% no stars; 18% stars $p<.05$ ) , but not the non elderly (7% for both versions) Bar charts vs. tabular numbers found no significant difference. Order by performance vs. alphabetical order decreased errors for the Medicare sample (30% vs. 46%, $p<.01$ ) Bar charts with evaluative labels verses no labels had not significant influence.  Sub analyses by level of comprehension found that those in the lowest quartile (combined Medicare and Medicaid) had better comprehension with the stars; all comprehension levels were helped by ordering by performance; evaluative labels helped the Medicare sample respondents in the middle quartile of comprehension.	Formatting does increase comprehension for some subgroups.

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4768	Jewett 1996	To explore what consumers want for making choices and how they will use the information	Eugene/Springfield OR	Focus Groups Descriptive Survey	NOTE: SAME AS HIBBARD 1996, AND HIBBARD 1997  15 Focus group (5 each for Medicaid, private insurance and uninsured) with a total of 104 participants	Comprehension and interpretation of 18 quality indicators grouped into desirable events; undesirable events; patient ratings of satisfaction and quality and disciplinary actions.	items from CAHPS and HEDIS	<p>Out of 1,723 comments made during the focus groups 24% reflected low comprehension.</p> <p>Undesirable events had the lowest comprehension (most low comprehension comments). Patient ratings were best understood.</p> <p>Low comprehension is evenly split between misinformation and acknowledged lack of information.</p> <p>21% of all low comprehension comments are based on lack of understanding of the medical condition associated with the indicator</p> <p>8% show lack of understanding of the test or procedure</p> <p>20% interpret indicator performance in the opposite direction from its intended meaning</p> <p>51% question the utility of the indicator or are misinformation</p> <p>Separate analysis from above (so these comments are reanalyzed) found that 43% of low comprehension comments reflect lack of understanding of aggregate or quantitative concepts such as rates or the nature of comparisons.</p> <p>57% of low comprehension comments are related to plan-level concepts such as how plans influence care or how hospitals vary.</p> <p>26% of low comprehension comments reflect beliefs that events measured by the indicators are uncontrollable or inevitable.</p> <p>Low comprehension is evident for Medicare, Medicaid and uninsured.</p>	Consumers views differ from those of policy makers who created the indicators. Consumers seem unable to 'roll-up' from these specific measures to a general sense of quality even though that is how indicators are often intended to be used.
3572	Marquis 2001	To provide information on employer health insurance purchasing strategies	USA	Descriptive Survey	1997 RWJF Employer Health Insurance Survey of a national sample of 21, 545 business establishments. Response rate was 60%	Use of quality information when choosing health plans to offer	NA	<p>Percentage Of Large Employers Using Information On Quality Of Care When Choosing Which Health Plans To Offer, By Employer Characteristics, 1997</p> <p>All establishments Offers HMO/POS Does not offer HMO 58% 69% 49%</p> <p>Offers choice of plans Yes 76 78 67 No 49 57 46</p>	More than half report using quality information and this is higher if employers offer HMO/POS. Employers do not seem to have shifted responsibility to employees as employers that offer choices are more likely to use quality information.

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3225	O'Day 2002	To elicit health plan selection and assessment criteria by groups of people with impaired mobility arising from different origins	Phoenix, Philadelphia and Washington DC	Focus Groups Content Analysis	Each Participant had a mobility Impairment. 57 Individuals of working age who use a mobility aid and have Multiple Sclerosis, Cerebral Palsy, Rheumatoid Arthritis or Spinal Cord Injury	Focus Groups asked questions on several domains: (1) disability-related experiences with primary care providers; (2) access to specialists; (3) physical access to care; (4) strategies for getting health plan payment for needed care, including durable medical equipment and prescription drugs; and (5) dimensions of a high quality health care plan	CAHPS	Analyzed CAHPS and determined what criteria for this group are and are not included. Included: Access to Primary Care Partially covered, but might need disability specific items: access to specialists to rehabilitation, to medications, to equipment, health plan information, to transportation No information: accessible facilities Plan criteria identified as important: Provider panel with appropriate accessible specialists Ease of referral Transportation and physically accessible offices Medications on formulary Equipment and models covered Independent living needs covered Maintenance (not improvement) and alternative therapies covered Coordination of Care Access to preventive services Health plan information in alternative formats Responsive appeals process	
1419	Paulsbo 2007	To explore report card preferences of people with disabilities	Oregon, California, Virginia, Maryland, and DC	Focus Groups	N=49 people; 34 women, 15 men recruited through independent living centers	Defining quality health care including: Care coordination and communication Choice of providers Disability competence and sensitivity Access to information Evaluation or report card content	Reports from California, Maryland, Michigan and Texas	Most participants preferred shorter report cards and wanted number and visuals. Some did not understand stars or composite ratings. Most wanted disability specific information and provider specific, not just health plan ratings. They also wanted information on the coordination of care and accessibility of facilities.	Finding confirm other studies that demonstrate that format can help or confuse and that people want information specific to there situation or condition.
5850	Peters 2009	Examine the impact of evaluative meaning on the impact numeric information has on health care decisions.	USA	Lab-type Experiment	Study 1: 303 non student adults Study 2: 207 older adults Study 3: 218 respondents to ad in student paper Study 4: 83 undergraduate students	Comprehension Use of information Impact of information on choice	NA	Study 1: Mood and numeracy impact interpretation when no categories are provided; the presentation with evaluative information helps people use it. Study 2: People made different choices of health plan (picked the better plan more often) based on the bar chart with labels and lines vs. the bar chart alone or with just lines. Study 3: 54% chose the 'better' plan when they had information with categories; 39% chose it when they did not Study 4: feeling about choices may be more consistent than thoughts and the use of categories made feeling come to mind more quickly than thoughts	Presenting evaluative information allows people to use numbers in ways that differ from when numbers are presented alone. The results suggest people need assistance in interpreting what numbers mean. However providing this assistant requires difficult decisions about what categories to use (e.g. what is good and what is poor). Presentation of simple numbers is unlikely to lead to the informed decisions intend by many health care policies.

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11701	Rainwater 2005	To evaluate California's Quality of Care Report Card	California	Focus Groups and Interviews	6 consumer focus groups 2,341 mail and internet surveys of Quality Report Card users, Interviews with program staff in depth telephone interviews with 56 key informants	1. Do consumers use the Quality Report Card 2. How useful are the included quality measures 3. What is the impact of the Quality Report Card on quality improvement	CA Quality of Care	<p>HMOs and Medical Groups are familiar with the report (100% of HMOs and all but one Medical Group informant). Used to benchmark performance against similar providers 47% of Medical Groups and 13% of health plans undertake QI in response to report card.</p> <p>Dissemination of the paper version has increased each year (more than 100,000 booklets). Website has 28,000 visitors per year. 90% of users are consumers who are comparing (48.1%), seeking information about current (37.5%) or considering joining (11.5%) HMOs.</p> <p>Most users review the summary page with the HMO star charts (74.5%) and not the details Area of most interest is Plan Service (customer service, paying claims etc.) Comparative information on prevention indicators is of less interest either because performance is the same or it is only relevant to specific people.</p>	
10388	Rosenthal 2007	To provide systematic descriptions and analyses of value-based purchasing and related efforts to improve quality of care by health care purchasers.	USA	Descriptive Survey	Largest 26 private and public employers in each of the selected markets, with the exception of New Orleans and San Antonio, in which we sampled 7 and 20 employers respectively.	Comparisons were made by employer size (<1000 (103), 1001-5000 (281) and >5000(225))	HEDIS CAHPS	<p>Weight given to CAHPS/HEDIS when a health plan is chosen, by employer size: &lt;1000 Employees - 57 (45-70) 1001-5000 Employees - 64 (56-72) &gt;5000 Employees - 62 (50-73) p-value for difference in employer size = 0.29</p> <p>Value based Purchasing efforts directed at Health Plans &lt;1000 Employees - 11 (2-19) 1001-5000 Employees - 11 (5-16) &gt;5000 Employees - 26 (15-37) p-value for difference in employer size = 0.003</p>	Authors conclude that many large employers are not using their purchasing power with health plans to improve the quality of health care received by their employees.

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1076	Sarfaty 2008	To determine if the inclusion of a colorectal cancer screening measure in HEDIS lead to changes in policy and practice by insurance plans in Pennsylvania	PA	Descriptive Survey	Medical Directors of insurance companies marketing health plans in PA. 13 companies met the inclusion criteria and all 13 (100%) responded to the survey.	Survey asking if specific actions and policies were changed in response to the addition of the HEDIS measure	HEDIS	<p>Screening Policies before and after HEDIS addition of measure</p> <p>a. Activity Before 2003 # (%)</p> <p>b. 2003 or After # (%)</p> <p>c. Unknown # (%)</p> <p>d. No Response # (%)</p> <p>Adopted practice guidelines</p> <p>a. 6 (46)</p> <p>b. 2 (15)</p> <p>c. 2 (15)</p> <p>d. 3 (23)</p> <p>Revised guidelines</p> <p>a. 2 (15)</p> <p>b. 7 (54)</p> <p>c. 0</p> <p>d. 4 (31)</p> <p>Measured CRC screening rate</p> <p>a. 1 (8)</p> <p>b. 8 (62)</p> <p>c. 1 (8)</p> <p>d. 3 (23)</p> <p>Implemented the HEDIS measure</p> <p>a. NA</p> <p>b. 9 (69)</p> <p>c. 0</p> <p>d. 5 (39)</p> <p>Coverage and Tracking Changes in response to HEDIS addition</p> <p>Activity: Yes # (%); No # (%)</p> <p>Coverage of more types of CRC screening tests: 3 (23); 9 (69)</p> <p>Lowered out-of-pocket charges for CRC screening: 1 (8); 10 (77)</p> <p>New or updated enrollee or provider reminder systems: 6 (46); 6 (46)</p> <p>New or updated data systems to track CRC screening: 6 (46); 6 (46)</p>	Some Medical Directors report increases in activities related to screening (adopting guidelines, reminder systems) in response to the inclusion of a related measure in HEDIS, but not all plans report taking these actions.

Refid	Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/ Type	4. Sample/ Population Procedure	5. Outcomes	6. Name of Public Report	7. Results	8. Summary
3549	Scanlon 2001	To explore how managed care plans use performance measures such as HEDIS and CAHPS for quality improvement.	PA, MD, KS, and WA	Interviews	24 plans in the selected states (six per state) and attempted to interview CEO, Medical Director, and directors of quality improvement. Completed 8 CEO interviews (33.3%); 19 QI directors (79.2%) and 15 medical directors (62.5%).	1. How QI is organized generally 2. What prompted 3 specific QI activities, how they were monitored and barriers. 3. Evaluation of HEDIS and CAHPS	CAHPS and HEDIS	<p>Ratings of HEDIS and CAHPS</p> <p>a. HEDIS Mean Accuracy Rating (1-5) b. HEDIS Mean Utility Rating (1-5) c. CAHPS Mean Accuracy Rating (1-5) d. CAHPS Mean Utility Rating (1-5)</p> <p>Overall Mean Ratings</p> <p>a. 3.35 (n = 34) b. 3.60 (n = 34) c. 3.21 (n = 33) d. 3.13 (n = 32)</p> <p>CAPHS items are viewed as not specific enough</p> <p>77% of the identified QI activities were in response to performance measurement but 37% were targeted exclusively because of HEDIS and 6% exclusively because of CAHPS. Most frequently mentioned advantage is comparison to other plans. Another mentioned use was to identify areas where more information was needed to drill down and understand a rating or to monitor progress once a QI initiative was started. Respondents reported that measures need to be standardized, actionable, timely, stable and capable of trending and relevant.</p>	Plans use measures but in a variety of ways including targeting QI, establishing goals and monitoring progress. Respondents have specific issues with HEDIS and CAHPS including the cost and specificity of the information.
3548	Smith 2001	To assess the information needs and responses of managed care plans to the Medicare Managed Care Consumer Assessment of Health Plans Study.	USA	Focus Group	23 focus groups over 3 years (1998-2000) and 12 interviews over two years (199-2000) with 150 representatives of managed care plans.	Themes Credibility of the report, concerns about public reporting, preferred displays of comparative performance, information to support quality improvement, and the logistic challenges of producing effective reports.	CAHPS	<p>Credibility of the report was lowest at the first round before it was actually distributed and increased as plans gained experience with the report.</p> <p>Concerns about public reporting also decreased. Participants like comparative displays but wanted them limited to practical market areas and not to include plans from too big an area. Plans reported using the report for QI, but wanted the raw data or more detailed analysis by beneficiary type.</p> <p>Logistic challenges included receiving the data more than 1 year after it was collected and getting reports distributed to local offices if they sent to the central office of a large organization.</p>	Managed care representatives found the report useful and acceptance of public reporting increased over time. Participants said plans intensified their QI efforts in response to below average scores but competition inhibited sharing best practices.



Refid	Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/ Type	4. Sample/ Population Procedure	5. Outcomes	6. Name of Public Report	7. Results	8. Summary
3741	Spranca 2000	To learn whether consumer reports of health plan quality can affect health plan selection.	Los Angeles CA area	Lab-Type Experiment	<p>n=311 men and women in Los Angeles county who were recruited by a focus group recruiting firm</p> <p>A controlled Lab Experiment where 4 hypothetical health plans were presented (HMO vs PPO) and CAHPS survey results were given to experimental arm and not the control arm. Experimental Arm 1: n=91 Higher CAHPS ratings for more expensive plans Experimental Arm 2: n=88 Higher CAHPS ratings for less expensive plans Control Arm: n=132 No CAHPS</p>	<p>1. %Distribution of Plan Choice</p> <p>2. Gain in Market Share as a result of higher vs. Lower CAHPS ratings by Plan type (HMO vs PPO)</p>	CAHPS	<p>1. Consumer Preferences for plans A through D were essentially the same in control vs experimental group1 Chi-square=2.14, p=0.54, n=309</p> <p>2. Plan preferences were significantly different between the control vs experimental group 2 Chi-Square=20.07, p=0.0002, n=309</p> <p>A follow-up test showed that consumers shifted toward plans with higher CAHPS ratings vs lower CAHPS ratings compared to the control group Chi-square=55.61, p&lt;0.0001, n=309.</p> <p>People's preferences to HMOs are more sensitive to CAHPS ratings than are their preferences for PPOs.</p> <p>The medium in which information was presented (printed vs web) had no effect on preferences for Plans A through D chi-square=0.70, p=0.87 or on the strength of CAHPS effects chi-square=4.12, p=0.25.</p>	CAHPS ratings have an effect in situations where high CAHPS plans cost less and cover fewer services and not in situations where high CAHPS plans cost more and cover more. This suggests that CAHPS ratings may help to contain costs.
1435	Spranca 2007	To investigate how intermediaries use the Medicare web site, whether including disenrollment information affects recommendations and the effects of time pressure	Los Angeles CA area	Lab-type Experiment	359 Medicare intermediaries (people who helped a family member or partner with health-related decisions that were under 65 and comfortable reading and writing English and using a computer.	<p>Response to disenrollment information</p> <p>Time spend on website sections</p> <p>Selection of plan</p>	HEDIS and CAHPS measures were included on the sites	<p>Disenrollment information</p> <p>55% very important 34% somewhat important 48% very useful 39% somewhat useful 58% very easy to understand 36% somewhat easy 46% felt site contained the right amount of information 34% would like a little more</p> <p>The disenrollment information had no significant effect on choice</p> <p>Subjects with lower educational levels were more likely to pick plans with lower HEDIS/CAHPS scores when disenrollment information was added.</p> <p>Time constraint (limited to 15 minutes) reduced time spent on site by 3 minutes (p&lt;.001)</p> <p>Time reduced to all sections but by different amounts when disenrollment is added</p> <p>Plans with higher CAHPS/HEDIS scores were preferred whether there was a time restraint or not.</p> <p>When under a time restraint, low cost /benefit plans were more likely to be selected.</p>	Disenrollment information may increase the cognitive burden on people with lower educational levels. People say the additional information is useful, but may not actually use it in a decision. Time constraints affect how much time is allocated to the task and encourage focus on attributes considered important or that are more familiar.

Refid	Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/ Type	4. Sample/ Population Procedure	5. Outcomes	6. Name of Public Report	7. Results	8. Summary
1437	Teleki 2007	To describe how CAHPS is formatted and disseminated by sponsors.	USA	Interviews	25 CAHPS sponsors including 8 State Medicaid agencies, 9 other state agencies, 4 business coalitions, and 4 national organizations. 25 out of 33 contacted to participate after randomly selecting 40 from 80 possible sponsors and removing duplicates and non working phone numbers	(1) What CAHPS® consumer experience data do sponsors report?, (2) How do sponsors report this information?, and (3) What are sponsors' goals in reporting data?	CAHPS	<p>Types of data in reports: % of respondents Both CAHPS® and Non-CAHPS Data 84 CAHPS® Data Exclusively 16 Health Plan-Level 92 Trend Data 48 Comparison Groups 91 Composite Measures 70 CAHPS® Supplemental Items 68</p> <p>Ways Data Were Reported : Percent (Proportion)  Intended Audience  Public Only 44 (11/25)  Limited Audience Only 8 (2/25)  Both Public and Limited Audiences 48 (12/25)  Media  Web-Based 100 (25/25)  Written 96 (24/25)  Data Files 40 (10/25)  Frequency of Reporting  At Least One Report within Past 2 Years 88 (22/25)  At Least One Report Annually 80 (20/25)  Timing of Report Release  Fall 52 (13/25)  No Specific/Consistent Month 28 (7/25)  Literacy  Assessed Literacy of at Least One Report 54 (13/24)2  Among Those Assessing Literacy  With Literacy Software Program 46 (6/13)  By Internal Staff 38 (5/13)  With Some Other Method (e.g., Focus Group) 23 (3/13)  Translation  Translation of at Least One Report into a Foreign Language 33 (8/24)2  Hired Vendor to do Translation(s) 100 (8/8)  Dissemination of Report  Notified Audience about at Least One Report 76 (19/25)  Distributed Report by Regular Mail 68 (17/25)  Distributed Report on Web Site 60 (15/25)  Distributed Report by E-mail 28 (7/25)  Evaluation of Reporting Process  Conducted Any Type of Evaluation 52 (14/25)  Hired Vendor to Assist with Evaluation 71 (10/14)</p>	Sponsors are engaged in many activities to produce and disseminate CAHPS data so it can be used. Area where additional work could make reports more effective include: tailoring reports to specific audiences, consider and adjust for literacy levels, more actively plan dissemination, evaluate reports, and selecting and working vendors to be sure they understand the report card.

Refid	Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/ Type	4. Sample/ Population Procedure	5. Outcomes	6. Name of Public Report	7. Results	8. Summary
3092	Uhrig 2002	To test the effects of comparative quality information on plan choice.	Eastern and Central Pennsylvania, USA	Lab-type Experiment	226 Medicare Beneficiaries (age 65 or older)	<p>Hypothesis 1: Probability of choosing the high-cost HMO, if choosing an HMO in any quality information group vs no information group. AND Probability of choosing Original Medicare (instead of HMO) in these two groups.</p> <p>Hypothesis 2: Probability of choosing high-cost HMO, if choosing HMO in high ratings for plan compared to low rating for plan AND Probability of choosing Original Medicare (instead of HMO) in these groups.</p>	CAHPS and HEDIS	<p>Predicting the probability of choosing the high-cost HMO vs the Low-Cost HMO: Intercept - -0.7897 (beta-coefficient) p=0.5032 Scenario A - Intervention 1: 2.75 (beta-coefficient) p=0.0072 Scenario B - Intervention 1: 0.19 (beta-coefficient) p=0.8632 Intervention 2: -1.71 (beta-coefficient) p=0.0907 Intervention 3: 3.32 (beta-coefficient) p=0.0009 Intervention 4: 0.197 (beta-coefficient) p=0.8117</p> <p>Predicting the probability of selecting Original Medicare vs an HMO: Intercept: 0.0557 (beta-coefficient) p=0.9297 Intervention 1: -0.1267 (beta-coefficient) p=0.8182 Intervention 2: 0.1267 (beta-coefficient) p=0.8274 Intervention 3: 0.2165 (beta-coefficient) p=0.6995 Intervention 4: -0.8009 (beta-coefficient) p=0.2040</p>	Authors conclude that the effect of quality information on plan choices differ by plan type. Information about plan quality did not alter Medicare beneficiaries' willingness to enroll in a Medicare HMO instead of Original Medicare.
1710	Uhrig 2006	To test the impact of content and format on choice of plans of different versions of employer-based and Medicare Advantage information.	Oregon and North Caroline	Lab-type Experiment	152 people 58 to 64 years old recruited through word-of-mouth and snow ball sampling.	<p>(1) perceived utility of the materials, (2) understanding and awareness of the materials, (3) use of health plan quality information, and (4) health plan choice Control variables were education, gender, race, household income, and self-reported health status.</p>	HEDIS and CAHPS information	<p>The new and alternative versions were</p> <ol style="list-style-type: none"> <li>1. rated significantly better on ease of use (p&lt;.0001)</li> <li>2. had significantly higher scores on a quiz about Medicare and health insurance (p&lt;.01)</li> <li>3. Use of Quality Information is more likely with non control materials</li> </ol> <p>Comparison to control materials Variable OR (95% Confidence Interval) *p&lt;.05 Quality Information Use of Quality Information Choose with Care 5.68* (1.19, 27.19) Alternate 6.36 (0.80, 50.74)</p> <p>Plan Choice Appropriate Plan Choice Choose with Care 2.72* (1.05, 7.00) Alternate 3.33* (1.23, 9.01)</p> <p>High-Quality Plan Choice Choose with Care 3.24* (1.30, 8.09) Alternate 2.56* (1.04, 6.31)</p>	The new shorter materials with design elements selected to improve usability were easier to use and participants gained greater knowledge from them. They understood the comparative information better and were more likely to select high quality plans. They were also more likely to select a plan that matched what they said was important to them.

# Appendix N. Long-Term Care: Quantitative Evidence

## Section A: Contains columns 1 through 10 of all long-term care quantitative evidence (N1: N4)

Author Year	1. Study Purpose and/or a priori Hypotheses (if stated)	2. Geographic Location (e.g., New York, USAA, etc.)	3. Study Design	4. Sample/Population or Population	5. Primary Comparison	6. Outcomes	7. Public Report Name of and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
Cai 2010	To examine trends of influenza vaccination in nursing homes before and after public reporting.	USA	Interrupted Time Series	All NHs in USA who reported vaccination rates in NH Compare. N=15,560	Vaccination rates for three flu seasons (2005-2006, 2006-2007, 2007-2008) after the publication of vaccination rates in NH Compare. Rates for NY residents compared to rates for Community Dwelling elderly	Influenza vaccination rates for short and long-term nursing home residents.	NH Compare	None	high or low rates at baseline	none
Castle 2007	To determine if competition and excess supply influence nursing home quality scores over 1 year	USA	One Group Post Only	14,554 US Nursing Homes included in NHC for 2003 and 2004	NHs in markets with high competition and low occupancy rates to NHs in markets with low competition and high occupancy rates			characteristics of market they are located in		
Castle 2008	To examine nursing home quality scores after public reporting and determine if scores have improved accounting for regression to the mean. Also to determine if improvement varied according to market competition and occupancy rates.	USA	One Group Post Only	All Medicare and Medicaid certified NHs (N=14,224) in NH compare in 2004 and 2006	Trend in improvement post public reporting adjusted for regression to the mean. Sub groups comparisons by market characteristics.	15 quality measures used in NH Compare	NH Compare	Competitiveness of market, Occupancy rates in the market	none	none
Castle 2010	To determine if the presence of nursing homes publicly designated to be of chronic poor quality influenced the quality of care at other nursing homes in the market; specifically to test whether the attention brought by the designation of a Special Focus Facility (SFF) has a spillover effect on the quality of other NHs in the same county.	USA	Comparison Groups Posttest Only	All NHs in USA with OSCAR and Medicare compare who are not designated as special focus (not persistent low quality). N=16,850.	NHs in counties that had one or more special focus facility in 2007 to NHs in counties where none had this designation	Deficiencies and quality indicators included in OSCAR and NH Compare	Special Focus Facility designation on Nursing Home Compare	presence of SFF in market	none	none

Author Year	1. Study Purpose and/or a priori Hypotheses (if stated)	2. Geographic Location (e.g., New York, USAA, etc.)	3. Study Design	4. Sample/Population or Population	5. Primary Comparison	6. Outcomes	7. Public Report Name of and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
Jung 2010	To examine the association between home health agency characteristics and improvement in quality after the release of Home Health Compare	USA	Time Series Post Only	All home health agencies reporting HH Compare data for at least two years from 2003 to 2007. n= 8,678 agencies with two years of data (92% of all agencies in HH Compare for these years).	Change in quality measures from 2003 to 2007 (yearly measures), and change by Home Health Agency Characteristics.	7 outcome measures that were in HH Compare every year from 2003 to 2007 % of patients who improve in 1. Bathing 2. Transferring to bed 3. Taking oral meds 4. Have less pain 5. Walking or moving around % of patients who 6. Need urgent care 7. Are admitted to the hospital	Home Health Compare	None	Home Health Agency Characteristics including Ownership, hospital-based, branch/chain affiliation, number of RNs (size of agency), Medicare tenure, and geographic region	none
Liu 2005	To determine if quality measures for NH changed in a one year period after the release of NH compare and whether NHs can change their scores in a year.	USA	One Group Post Only	All USA NHs reporting data for NH Compare from January 2003 to January 2004 N varies by quality measure; 14,554 possible NH	One year change immediately post release.	1. Change in mean of reported measures 2. Count of facilities that improved, had worse quality, or no change.	NH Compare	None	none	none
Mukamel 2010	To determine if NHs shifted resources from hotel to clinical activities in response to public reporting (NH Compare).	USA	Interrupted Time Series	10,022 free-standing Medicare and Medicaid certified NH over 6-years from 2001 to 2006 (54,235 observations)	2 pre report-card years and 4 post-report card years	ratio of clinical to hotel expenditures for each NH by year	NH Compare	Market competition	Case mix, ownership, occupancy, Quality of care provided	none
Mukamel 2008	To examine whether NH quality of care has improved since NH Compare and whether improvement is associated with specific actions taken by NHs.	USA	Interrupted Time Series	For improvement over time: All USA NH 2001-2003  For association with actions: 10 percent random sample for a national survey of all Medicare and Medicaid certified NHs reporting NH Compare in November 2002. 724 out of 1502 (48.2%) responded	Pre Public Reporting: 4th Q 2001 to 4th Q 2002 (publication) Post Public Reporting: 1st Q 2003 to 4th Q 2003.	1. Change in values and trends for 5 Quality Measures (change in ADLs; New infections, pressure ulcers, physical restraints, and pain). 2. Association of change with actions NHs Administrators reported taking in response to NH Compare	NH Compare	None	none	none
Mukamel 2009	To investigate whether nursing homes 'cream skim' (admit healthier people) in response to NH Compare.  Hypothesize that cream skimming is more likely among for-profit, high occupancy and NH with low quality scores. Chain affiliation and region of the country are considered by no direction of impact hypothesized.	USA	Interrupted Time Series	All Medicare and Medicaid certified NH in USA: N=16,745. Data on admission cohorts are based on people over 65 years old and long-stay not post-acute admissions.	Pre Reporting: 1st Q 2001 to 4th Q 2002 Post Reporting: 1st Q 2003 to 4th Q 2005. NH Compare changed in 1st Q 2004 and this time is noted as well.	6 Characteristics of people admitted to NH: ADL limitations, Diabetes, Incontinence, PU stage 2 or higher, Pain, Memory loss.	NH Compare	None	Nursing home characteristics (for profit, chain, occupancy, initial quality scores, geographic region).	none

Author Year	1. Study Purpose and/or a priori Hypotheses (if stated)	2. Geographic Location (e.g., New York, USAA, etc.)	3. Study Design	4. Sample/Population or Population	5. Primary Comparison	6. Outcomes	7. Public Report Name of and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
Stevenson 2006	To determine if the reporting of deficiencies and staffing levels had an impact on occupancy rates for NHs	USA	Interrupted Time Series	USA Medicare/Medicaid certified free standing nursing homes	Pre Reporting is period is prior to NHC--Oct. 15, 1998 (1996, 1997, 1998). Post: (1999, 2000, 2001, 2002). One, two and three years post were tested.	NH Occupancy rate by year	Deficiencies and Staffing in p	market characteristics are included in alternate models to see if the produce different results	size, for profit statUSA, chain statUSA, resident case mix...are all included as controls, not characteristics	none
Werner 2009	To determine whether public reporting resulted in improvements in reported and unreported quality of care for postacute care.	USA	Multiple Group Interrupted Time Series	NHs in Nursing Home Compare 1999 to 2005 N=8,137 including 5,899,327 stays of at least 14 days.  Small NHs not included in NHC and 214,094 postacute stay of at least 14 days. N=2,277	1. Pre 2002 NH Compare launch vs. post 2. NHs in NH Compare vs. small nursing homes not included in NHC	NH Compare measures for postacute care (pain, delirium, improvement walking).  Potential preventable rehospitalizations as a general, not reported quality measure	NH Compare	None	none	none
Werner 2009	To examine the effect of publicly reported quality information on unreported quality of care for postacute care in nursing homes	USA	Interrupted Time Series	13,683 NHs in US with MDS data for postacute patients from 1999 to 2005	pre NH Compare and post NH Compare for quality measures reported and quality measure not reported but that can be calculated from MDS	3 publicly reported measures from NHC: Pain, Delirium, Walking)  9 not publicly reported measures developed for post acute care: Improved pain, locomotion, Shortness of breath, Bladder incontinence, Respiratory infection, UTI, ADL, mid-loss ADL, early loss ADL.  Professional nurse staffing changes	NHC	None	none	none
Werner 2010	To examine changes in quality in post acute care in Nursing Homes after NH Compare and determine to what extent consumer-driven changes in market share and provider-driven changes in quality are responsible for the improvements.	USA	One Group Pretest Posttest	All nursing homes (8,137) involved in public reporting for the 3NH Compare post-acute care measures and 1,843,377 post-acute stays.	Pre: Twelve months before Post: Twelve months after launch of NH Compare	Change in three post acute quality measures (pain, delirium, improvement in walking) dissected into the portions attributable to 1. Nursing home specific quality improvements, 2. Changes in market share (consumer selection) and 3. residual changes	NH Compare for Post Acute care	None	none	none

Author Year	1. Study Purpose and/or a priori Hypotheses (if stated)	2. Geographic Location (e.g., New York, USAA, etc.)	3. Study Design	4. Sample/Population or Population	5. Primary Comparison	6. Outcomes	7. Public Report Name of and Description*	8. Context: Environment Characteristics	9. Context: Decisionmaker Characteristics	10. Context: Type of Decision/ Choice
Zinn 2005	To examine the relationship between publicly reported quality measures and NH characteristics.	USA	Time Series Post Only	All NHs reporting for NH Compare during the time period N varies by quality measure over 13,00 for long-stay resident measures, over 9,000 for short-stay resident measures	5 quarters (15 months ) NH Compare quarterly reports from Nov. 2002 (first publication) through January 2004	10 Quality Measures included in NH Compare at time of study	NH Compare	None	nursing home characteristics	none
Zinn 2008	To assess whether differences in strategic orientation are associated with differences in NH responses to NH Compare	USA	Cross-sectional	Same survey as 960 and 1421 10% random sample of NH administrators. 724 out of 1502 responded (48.2%)	Cross sectional comparison of response to NH Compare by different types of strategic orientation: Prospectors change frequently and value innovation and flexibility Defenders focus on core services and emphasize operating efficiencies. Analyzers blend characteristics of the 1st two. Reactors lack a strategy.	1. Immediate Response 2. No response to NHC 3. Discussed with residents or families 4. Investigate reasons for poor scores 5. Revise job descriptions 6. Change priorities for QI 7. Invest in new technology of equipment.  All in response to NH Compare and all as self reported by survey respondents.	NH Compare	None	NH characteristics including for-profit status, chain affiliation, low quality scores, and perceived competitiveness of the market were control variables, not outcomes	none
Zinn 2010	To determine if NHs were motivated to invest substantial resources in response to NH Compare  Hypotheses: Quality investments in response to public report will be associated with perceived influence on 1. Professional referrals, 2. Patients and family choices; 3. State survey process. 4. In highly competitive markets, low-quality scores will be associated with investments to improve quality compared to NH with high scores. 5. Having a managed care contract will be associated with lower likelihood of making substantial resource investment in response to the public reporting	USA	Cross Sectional	10% random sample of nursing home administrators of all facilities with at least one quality measure reported on NH Compare in 2006  538 responses of 1407 contacted (38.3%)	Likelihood of investing resources to respond to NH Compare by administrator perceptions and NH characteristics	Hired new nursing director Hired new medical director Hired more clinical staff Increased staff wages Other initiative to hire/retain staff Purchased new equipment/technology  All self-reported by administrators in response to questions asking if these actions were undertaken specifically in response to NH Compare	NH Compare	perceived competitiveness of the market	For-profit, chain affiliation, strategic type of administrator	none

**Section B: Contains columns 11 through 19 of all long-term care quantitative evidence (N5: N19)**

Author Year	11. Results: KQ1 (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Funder of Research/Report Article and Conflicts of Interest	19. Notes
Cai 2010	none	none	<p>Vaccination rates (mean) for States and DC (n=51) (2005-6 pre-Report, 2006-7, 2007-8, change 2005-6 and 2007-8)</p> <p>Short-term residents 74.64, 76.99, 80.10, 5.46% Long-term residents 87.15, 87.88, 88.82, 1.67% Community dwelling 65.64, 68.80, 72.05, 6.41%</p> <p>38 states experienced improvement in vaccination rates for short term residents and 29 states for long term residents.</p>	none	None	<p>NYS NH Vaccination rates by facility and baseline score ( 2005-06 and 2006-07 )</p> <p>Low baseline group Short term residents: 58.53; 70.22 Long term residents: 83.43; 86.81</p> <p>High baseline group Short term residents 86.89; 85.33 Long-term residents: 93.62; 91.79</p>	<p>Immunization rates at NHs increased after public reporting in NH Compare, but rates also increased in community dwelling elderly suggested the increase may not be due to public reporting.</p> <p>Facilities that had low baseline scores were more likely to increase their vaccination rate.</p> <p>Impact on hospitalization was mixed.</p>	NIA Conflicts: Not Reported	



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Castle 2007						<p>Adjusted Odds Ratio of highest quartile to lowest quartile (95% CI) for influence on quality measures</p> <p>Competition (AOR&gt;1 greater competition- improvement),</p> <p>Occupancy (AOR&gt;1 higher occupancy-improvement),</p> <p>Interaction (AOR&gt;1 lower competition and high occupancy - improvement).</p> <p>Need for help with daily activities has increased 1.18 (1.03 to 1.27*) 0.85 (0.64 to 0.96**) 0.92 (0.76 to 1.05)</p> <p>Moderate to severe pain 1.10 (0.98 to 1.32) 0.97 (0.61 to 1.04) 0.99 (0.67 to 1.10)</p> <p>Low-risk residents who have pressure sores 1.14 (1.01 to 1.26*) 0.86 (0.70 to 0.97*) 0.88 (0.71 to 0.97*)</p> <p>Physically restrained 0.81 (0.76 to 1.03) 1.11 (0.90 to 1.32) 0.91 (0.86 to 1.12)</p> <p>More depressed or anxious 0.95 (0.80 to 1.02) 0.96 (0.80 to 1.12) 0.97 (0.82 to 1.15)</p> <p>Lost control over their bowels or bladder 0.92 (0.81 to 1.08) 0.98 (0.81 to 1.22) 0.93 (0.78 to 1.19)</p> <p>Catheter inserted and left in 1.07 (0.89 to 1.10) 0.89 (0.77 to 1.00*) 0.90 (0.79 to 0.98*)</p> <p>Spend most of their time in bed or in a chair 0.93 (0.81 to 1.05) 0.90 (0.72 to 1.15) 0.95 (0.77 to 1.12)</p> <p>Ability to move about has become worse 0.96 (0.86 to 1.11) 0.93 (0.88 to 0.99*) 0.95 (0.82 to 0.99*)</p> <p>Urinary tract infection 0.95 (0.86 to 1.05) 1.03 (0.93 to 1.12) 0.93 (0.86 to 1.10)</p> <p>Lost too much weight 0.87 (0.79 to 1.08) 0.91 (0.88 to 1.13) 0.97 (0.89 to 1.10)</p> <p>Short-stay residents with delirium 1.25 (1.04 to 1.29*) 0.85 (0.69 to 0.99*) 0.88 (0.70 to 0.97*)</p> <p>Short-stay residents with moderate to severe pain 1.21 (1.07 to 1.33*) 0.73 (0.61 to 0.95*) 0.75 (0.68 to 0.98*)</p> <p>Short-stay residents with pressure sores 1.15 (1.03 to 1.27*) 0.84 (0.78 to 0.97*) 0.99 (0.70 to 1.17)</p> <p>Overall quality measures' difference 1.12 (1.03 to 1.16*) 0.89 (0.76 to 0.98*) 0.93 (0.79 to 0.97*)</p>	<p>General conclusions and data same as Liu, 2005.</p> <p>5 Quality Measures (QM) have significant AOR for competition, indicating more improvement. 7 have lower AOR for occupancy also indicating more improvement.</p> <p>Improvements were most likely in highly competitive markets and in markets with low occupancy rates. This supports the idea that report card encourage improvement through market-driven mechanisms.</p> <p>3 of the QM that show more improvement are short-stay, who NH may be more open to influence by market forces (Medicare rates are higher and turn over may allow faster gains in improvement).</p>	Funding: not reported Competing interests: none declared	

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Castle 2008	<p>Mean 2004, Mean 2006, Relative Change (negative is improvement in quality):</p> <p>Long-stay residents Increased Help with Daily Activities: 15.39, 15.68, 2%*</p> <p>Pain: 6.32, 5.03, -20%*</p> <p>High-risk with Pressure Sores: 13.43, 12.86, -5%*</p> <p>Low-risk with Pressure Sores: 2.59, 2.42, -7%*</p> <p>Physically Restrained: 7.26, 6.13, -16%*</p> <p>More Depressed: 14.66, 14.45, -1%*</p> <p>Lose Control of Bowel or Bladder: 47.68, 48.66, 2%*</p> <p>Catheter: 5.91, 5.79, -2%*</p> <p>Most Time in Bed or Chair: 4.21, 4.21, 0%</p> <p>Worse Ability to Move Around: 12.18, 12.56, 3%*</p> <p>Urinary Tract Infection: 8.64, 8.74, 1%*</p> <p>Lose Too Much Weight: 8.63, 8.73, 1%</p> <p>Short-Stay Residents Delirium: 2.97, 2.31, -22%*</p> <p>Pain: 23.11, 21.47, -7%*</p> <p>Pressure Sores: 19.16, 18.39, -4%*</p> <p>*significant at .05 using a paired t-test</p>	none	none	none	None	<p>Influence of competition AOR (95% CI) and Occupancy AOR (95% CI) on Quality Measures</p> <p>AOR&lt;1 = high competition associated with improvement</p> <p>AOR&gt;1 low occupancy associated with improvement</p> <p>Long-stay residents Increased Help with Daily Activities: 0.69 (.55-.85)**; 0.79 (.67-.94)**</p> <p>Pain: 1.05 (.84-1.12); 1.10 (.87-1.39)</p> <p>High-risk with Pressure Sores: 0.45 (.19-.77)**; .90 (.68-1.19)</p> <p>Low-risk with Pressure Sores: 0.89 (.69-1.14); 0.61 (.45-.82)***</p> <p>Physically Restrained: 1.41 (.86-2.32); 0.9 (.71-.96)**</p> <p>More Depressed: 0.77 (.63-.97)**; 0.81 (.68-.96)*</p> <p>Lose Control of Bowel or Bladder: 0.95 (0.59-1.52); 0.84 (.67-.99)*</p> <p>Catheter: 1.02 (.90-1.15); 0.99 (.82-1.19)</p> <p>Most Time in Bed or Chair: 0.94 (.87-.99)*; 0.93 (.75-1.16)</p> <p>Worse Ability to Move Around: 0.96 (.79-1.17); 0.72 (.58-.89)**</p> <p>Urinary Tract Infection: 0.85 (.61-.97)*; .82 (.72-.95)**</p> <p>Lose Too Much Weight: 0.43 (0.29-0.85)**; 0.89 (.59-.99)*</p> <p>Short-Stay Residents Delirium: 0.97 (.77-.99)*; 0.81 (.69-.95)*</p> <p>Pain: 0.81(.67-.98)**; 1.10 (.91-1.32)</p> <p>Pressure Sores: 0.93 (0.59-1.46); 0.81 (.63-.99)*</p>	<p>From 2004 to 2006, there was improvement in 9 quality measures, decline in 5 and 1 stayed the same. All but 2 (the no change and a 1% increase in % of residents who lose too much weight) were statistically significant (p&lt;.05). Improvements ranged from a 20% reduction in residents with pain to a 1% reduction in % of residents more depressed or anxiouUSA. The largest decline was a 3% increase in the % of residents whose ability to mover around in their room got worse.</p> <p>Stratifying the changes by the lowest 10% and highest 10% at baseline indicated that there may be some regression to the mean and for variable where this may be the case, an adjusted change score was calculated which reduced the magnitude but did not eliminate the improvement</p> <p>Improvements were most likely in highly competitive markets for 8 quality measures and in markets with low occupancy rates for 10 quality measures. This supports the idea that report card encourage improvement through market-driven mechanisms.</p>	Not Reported	

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Castle 2010		none	none	none	None	<p>Impact on quality measure of having a SFF NHs in the county Coefficient (SE) for model with all facilities.</p> <p>High-risk residents with Pressure Sores -.201 (.039) **</p> <p>Low-risk residents with Pressure Sores -.073 (.042)*</p> <p>Residents with UTI -.261 (.101)*</p> <p>Short-stay residents with Pressure Sores -.044 (.031)*</p> <p>Any deficiency .152 (.038) **</p> <p>Quality deficiency citations .137 (.079)*</p> <p>*p≤.01; **p≤.001</p> <p>Remainder of quality indicators were not significantly different. When only the subset of NHs below the median on quality rating in the county are compared, 8 out of 22 quality indicators are higher in counties with SSF. Additional measures with significant differences are pain, depressed; lose too much weight, and flu vaccine.</p>	<p>The analyses provide partial and relatively weak evidence of spill over of improved quality in counties with a SFF receiving attention for poor quality for the NHs in the county that had poorer quality when the SFF was designated. The increase in deficiencies is counter to the spill over hypothesis.</p> <p>In both cases, however the number of deficiencies and quality of care deficiencies cited during inspection surveys were higher for facilities in counties with a SFF.</p>	None Reported	

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Jung 2010	<p>Scores improved for all five of the measures related to the management of daily activities, but the degree varied by measure from 7.1% increase (3.4 percentage points) for transferring to bed to 18.9% (5.7 percentage points for ability to walk around). Urgent care did not change and hospitalizations increased (interpreted as a decline in quality). [Data not shown in tables].</p> <p>The percentage of agencies that: Improved, No change, Worsened 1. Bathing 61.9, 10.8, 27.4 2. Transferring to bed 54.9, 10.8, 34.3 3. Taking oral meds 59.8, 11.9, 28.3 4. Have less pain 57.2, 11.5, 31.3 5. Walking or moving around 62.1, 11.1, 26.8 % of patients who 6. Need urgent care 41.5, 13.4, 45.2 7. are admitted to the hospital 47.2, 12.0, 40.8</p>	none	none	none	None	<p>Quality scores generally improved for all types of agencies. For profits were higher on some measures at baseline but by 2007 nonprofits had improved more and had better performance for all measure. Agencies with lower baseline scores improved more. Agency types associated with higher quality at baseline often had larger improvements. [Data presented graphically, unable to extract values].</p>	<p>Quality measures for patient's ability to manage activities improved while urgent care and hospitalization did not. Baseline quality scores for 2003 varied by agency characteristics but the differences were small (3.6% to 11.3% of the mean depending on the measure). Not for profits did best on 4 of 7 measures, and for profits on 3 of 7. Hospital-based and larger agencies also had higher scores at baseline. There were no patterns in Medicare certification or region. Agencies with lower baselines, nonprofits, hospital-based, and agencies with longer Medicare Tenure improved more.</p>	<p>Social Science Research Institute at Pennsylvania State University Conflicts: none declared</p>	

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Liu 2005	<p>Mean 2003, Mean 2004, Difference 2003-2004 (negative is improvement in quality): no statistical test available</p> <p>c</p> <p>% Facilities with better quality, worse quality, no change</p> <p>Long-stay residents Increased Help with Daily Activities: 44.3, 49.3, 6.4</p> <p>Pain: 35.4, 38.4, 26.2</p> <p>High-risk with Pressure Sores: 50.5, 44.2, 5.3</p> <p>Low-risk with Pressure Sores: 40.7, 45.4, 13.9</p> <p>Physically Restrained: 43.7, 39.7, 16.6</p> <p>More Depressed: 35.3, 38.7, 25.8</p> <p>Lose Control of Bowel or Bladder: 35.5, 42.5, 22.0</p> <p>Catheter: 644.6, 49.2, 6.2</p> <p>Most Time in Bed or Chair: 46.6, 46.6, 6.8</p> <p>Worse Ability to Move Around: 46.7, 47.5, 5.8</p> <p>Urinary Tract Infection: 46.9, 43.0, 10.1</p> <p>Short-Stay Residents Delirium: 49.4, 46.5, 4.1</p> <p>Pain: 32.9, 38.2, 28.9</p> <p>Pressure Sores: 42.9, 52.7, 4.4</p> <p>All 14 items: 47.5, 50.9, 1.6</p>	none	none	none	None	none	<p>Overall there were small improvements in the one year period and more NHs improved then declined. 8 of 14 quality measures changed indicating an increase in quality over the 1 year period across all NH. For the other 6, there was a decrease. All of these changes except one were less than 1 percentage point (PU in short stay residents declined 1.32 percentage points).</p> <p>When NHs are split according to whether the quality measure indicates better or worse quality, more NH have better quality on 9 measures, more have worse quality on 4 and for one an equal percentage of NHs improved and declined. For example 49.2% of NH had better quality on the percentage of residents who spent most of their time in bed or chair, while 44.6% had worse quality scores during the period.</p>	Funding Reported Statement the authors have no commercial affiliations to disclose.	Liu 2005 and Castle 2007 report the same data for change over time and facilities that change, but the labels for the quality measures don't match. I have contacted the author to ask for clarification.

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Mukamel 2010	none	none	Ratio of clinical to hotel expenditures increased significantly ( $p<0.0001$ ) by 5% after publication of NH Compare. Average ratio: 1.78 Pre: 1.71 in 2001; 1.72 in 2002 Post: 1.76 in 2003; 1.84 in 2004; 1.85 in 2005; 1.80 in 2006 To get the same increase in expenditure ratio would require a 17% increase in case mix or a 27% increase in Medicare residents. Controlling for differential growth in the costs of clinical verses hotel services using the CPI reduced the effect by 75%, it remained significant.	none	None	The stratified results support the author's assumptions: NH with lower quality scores, lower occupancy, for-profit, chain owned and in more competitive markets increased their clinical to hotel expenditures after reporting.	NHs do appear to have increased their expenditures on clinical services after the public release of NH compare. This is supported by the fact that subgroups expected to be more sensitive to public reporting (e.g. those in competitive markets) shifted more resources to clinical services.	NIA Conflicts: Not Reported	
Mukamel 2008	Impact of Public Reporting on Quality Measures (Time Trend Change-all NHs, Change in Level: Demo States, Change in Level. Non Demo States) Physical Restraints 0.09, -0.92**, -0.74* Short-term Pain 0.12, -2.78***, -2.54*** Pressure Ulcers 0.05, 0.47, 0.56* ADLs 0.07, 0.48, 0.62 Infections -.18, -0.14, 0.23  *** $p<=.0001$ ** $.001<p\leq .01$ * $.01<p<.05$	none	Change in Level by Number of Actions Taken (1,2, 3, 4,5,) Physical Restraints -.62, -.89**, -1.09***, -1.22***, -1.29*** Short-term Pain: -2.38**, -2.48***, -2.58***, -2.68***, -2.77*** Pressure Ulcers .52*, .52*, .52*, .52*, .52* ADLs .64, .40, .22, .12, .08 Infections .16, .06, -.01, -.06, -.08  *** $p<=.0001$ ** $.001<p\leq .01$ * $.01<p<.05$	KQ4: none	None	none		NIA Stated: no disclosure or disclaimers	

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Mukamel 2009	none	Significant decline (0.5 one-tailed tests) in post publication admission charts ADL limitations: none Diabetes: none Incontinence: none PU stage 2 or higher: none Pain: 2.5 percentage points; 13% fewer admissions around time of first publication Memory loss: 0.4 percentage points; 0.7% fewer admissions around the time NH Compare changed in 1st Q 2004.	none	none		Significant decline (0.5 one-tailed test) in post publication admission charts when stratified by ownership, full occupancy status, having a low QM reported in first publication, chain affiliation and geographic region. ADL limitations: none Diabetes: none Incontinence: none PU stage 2 or higher: none Pain: NH in bottom 20th percentile for state has a stronger and sustained decline in admissions. Tendency to cream skim about for-profit and non-profit, but not government NH Memory loss: Tendency to cream skim among for-profit and chain affiliated NHs.	Empirical analyses found cream skimming in 2 of 6 admission cohort characteristics and the effect sizes in these 2 were not large. Four of the six characteristics did not decline in people admitted post NHC, suggesting there was no cream skimming. For 2 there was decline. For the four admission characteristics in which there was no decline, a decline was not found in stratified analyses by NH types, suggesting the overall analyses were not hiding cream skimming. For pain the evidence of some cream skimming is seen across the subgroups with no differences by chain affiliation or region. For-profits and non profits were more likely to cream skim than government-owned NH and but the strongest is that NH with poorer quality scores at initial publication were more likely to cream skim. For memory loss the subgroups with more cream skimming were for-profits, chain affiliation and, for only one follow-up Q, low quality.	NIA Conflicts: Not Reported	

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Stevenson 2006		none	none	Mean NH occupancy rate for the entire period was 86%. Regression with NH occupancy rate of next period as DV. IV are deficiencies and staffing levels in prior period. Regression coefficients Prior deficiencies - 0.038 Prior serious deficiencies - 0.372 Prior nurse staff 0.021 Prior aide staff -0.008 all significant p<0.05 r-squared: 0.75 N=87,739	None	none	While finding support the idea that public reporting has an impact on selection of NH, the effect sizes are small. Occupancy rate may not be the most appropriate outcome measure as it is constrained in its potential to change. Regression analyses including alternative models, all find an effect of the quality or staff reporting on occupancy, but the effects are small: an increase in 10 deficiencies would result in 0.4 percent decrease in occupancy.	NIA	



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Werner 2009	<p>Within NH changes associated with NH Compare</p> <p>No pain 2.0 percentage points improvement (base 76%)</p> <p>No delirium 0.5 percentage points improvement (base 96%)</p> <p>Improved walking 0.2 percentage points improvement (base 7%)</p> <p>Preventable rehospitalizations declined slightly (.075 to .05-- estimated from graph)</p> <p>Repeated model with small, non reporting 1 NHs as a control for secular trend</p> <p>No pain: improvement but decreased magnitude</p> <p>No delirium: no difference from pre-post model above</p> <p>Improved walking: improvement and increased magnitude</p> <p>Preventable hospitalizations: Slightly worsening then stable</p> <p>all changes pre and post NH compare <math>p &lt; .01</math></p>	none	none	none	None	none	<p>All three reported quality measures and potentially preventable rehospitalizations improved over time. (Same numbers reported as other Werner article 720)</p> <p>When Using the NHs not in NHC to control for secular trends, improvements in pain and walking occur after NHC, while delirium shows no change after this adjustment.</p> <p>Rehospitalizations worsen slightly after NHC and then stayed the same in the model with this adjustment.</p> <p>These improvements are within-NH changes rather than changes in market share or case mix as propensity scores were used to match cases for comparison which constrains these variables. These are tested within NHs at the facility level. Propensity scores are used for matching residents, so changes in market share are constrained and what is measured is provider-driven improvements.</p>	Funding: AHRQ, VA, PA Department of Health Stated: no disclosure or disclaimers	

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Werner 2009	none	<p>Change After NH Compare At implementation (2002-2003); between pre (2000-2002) and post (2003-2005) Reported Measures</p> <p>Pain: .0256; .0294 Delirium: .00486; .0139 Walking: .00377; .00863 Not Reported Improved Pain .0251; .0189 Locomotion: .00341; .00368 Shortness of Breath: .00592; .0105 Bladder Incontinence: .00619; .0111 Respiratory Infection: -.00323; .00918 UTI: -.00255; -.00902 ADL: -.00946; -.0268 Mid-loss ADL: .00900; -.00973 Early-loss ADL: -.00835; -.0242 all p&lt;.01</p> <p>Change in Not Reported Pre-Post NHC (High Scoring on Reported, Low Scoring on Reported) Improved Pain .047***, -.0149*** Locomotion: .0103***, -.00512 Shortness of Breath: .0211***, -.00482* Bladder Incontinence: .00931***, .00619** Respiratory Infection: .00107, .000697 UTI: -.00445***, .0173*** ADL: -.0319***, -.0278*** Mid-loss ADL: -.00656***, -.0163*** Early-loss ADL: -.023***, -.0277*** Nursing Staffing: -.0304***, -.0388** **p&lt;.05; ***p&lt;.01</p>	none	none	None	none	<p>Several unreported measures also improved after NHC launch and persisted through the post period; but several declined, though these trended down from 2000 through 2005 suggesting they might not be associated with NHC.</p> <p>The stratified analyses found that in general facilities that were high on reported measures improved on unreported measures. When quality declined overall for an unreported measure it was greater for the facilities who had lower quality reported measures. Reported and unreported quality of care improved after NHC. Improvements in unreported care were larger among facilities with high scores on reported measures. This supports the theory that quality improvement 'spills over' rather than other areas rather than 'crowding out' improvement in other areas.</p> <p>Authors conclude crowding out does not appear to be an unintended consequence of public reporting and suggest that a growing divide between NHs able and unable to do QI might be the consequence.</p>	AHRQ, University of PA, VA and PA Department of Health. No conflicts	
					N-15				

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Werner 2010	<p>Without Moderate to Severe Pain:73.8% at baseline and 77.3% post 2.4 percentage point increase in pts without pain due to NH QI, 1.6 percentage points due to change in market share -0.5 percentage point reduction due to residual (case-mix)</p> <p>No delirium: 96.2% for pre NHC and 95.5% post NHC. No change due to NH QI, 2.9 percentage points improvement due to market share - 2.7 percentage points reduced quality due to residual changes.</p> <p>Improvement in walking: Overall no change. 0.3 percentage points improvement due to NH QI, 1.1 percentage points due to market share. -0.9 percentage reduced quality due to residual changes.</p>	none	none	none	None	none	Find that both provider (NH QI) and market share (patient selection) explain observed improvements in quality. However the residual changes (here due to case mix) suggest these are not the only two pathways from public reporting to improvement, specifically that patients with different severity of illness may choose differently.	AHRQ and VA Conflicts: Not Reported	

Author Year	11. Results: KQ1 (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Funder of Research/Report Article and Conflicts of Interest	19. Notes
Zinn 2005	<p>Mean % of residents over 5 quarters (1, 2, 3, 4, 5) estimated from graph [significant at 0.01 and visual trend for 4 of 10 quality measures]</p> <p>Long-Stay Residents Pain: 10.8, 10.2, 8.8, 7.8, 7.2</p> <p>Physical Restraints: 9.8, 9.6, 9, 8.5, 8.2</p> <p>Short-Stay Residents Delirium: 3.8, 3.6, 3.4, 3.1, 3</p> <p>Pain: 25.4, 25.8, 24.8, 23, 22.6</p> <p>Following were statistically significant, but no trend on visual inspection.</p> <p>Long-Stay Residents Loss in Basic Daily Tasks: 15.5, 15.2, 15.5, 16, 15.3</p> <p>Pressure Sores: 8.5, 8.4, 8.5, 8.9, 8.9</p> <p>Pressure Sores risk adjusted: 8.5, 8.3, 8.5, 9.3, 9.1</p> <p>Infection: 14.6, 4.2, 15, 15.4, 15</p> <p>Short-Stay Residents Delirium Risk Adjusted: 3.8, 3.2, 3.2, 3, 2.9</p> <p>Walking for Short-Stay Residents was not significant.</p>	none	none	none	None	<p>5 Quality Measures that showed improvement were examined by NH characteristic (40 models). 8 Were statistically significant in terms of decline. (Unable to estimate from graph).</p> <p>Differences from baseline to last quarter by NH characteristic are notable in 3 cases.</p> <p>Delirium: low occupancy rate % greater than high occupancy rate</p> <p>Baseline 25%; Last Quarter 15%</p> <p>Pain Short Stay: Nonchain % greater than chain</p> <p>Baseline 4%; Last Quarter 2%</p> <p>Pain Long Stay: Hospital-based% greater than non Hospital</p> <p>Baseline 13%; Last Quarter 6%</p>	<p>All but one of the quality measures had changes that were statistically significant (0.01 level) over the time period, but graphical analyses found real trends in pain (long and short stay residents), physical restraints, and delirium (adjusted and unadjusted for NH case mix)</p> <p>Differences were found at baseline across types of NHs: Nonprofit, non chain, smaller, and high occupancy NH started with better scores. But the trend lines for the different types of NH do not cross, suggesting limited differences in response across NHs defined by these characteristics.</p>	Not Reported	

Author Year	11. Results: KQ1 (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Funder of Research/Report Article and Conflicts of Interest	19. Notes
Zinn 2008	none		<p>Odd Ratios Results from Logistic Regression for Action Taken by Strategic Orientation (Defender, Prospector, Analyzer Reactor) followed by other significant variables</p> <p>1. Immediate Response (Ref, 1.58**, 1.39*, 0.26**) for profit status 0.62**; Perceived completion 1.15* 2. No response to NHC (1.62*, Ref., 0.96, 1.54) Initial quality 0.89*; perceived competition 0.79***</p> <p>3. Discussed with residents or families (Ref., 1.49, 1.24, 0.98, 0.96) Chain affiliation 1.49+; perceived competition 1.37***</p> <p>4. Investigate reasons for poor scores (Ref., 1.59**, 1.54*, 0.64) initial quality 1.14*</p> <p>5. Revise job descriptions (Ref., 2.02**, 1.18, 0.52) initial quality 1.21*; perceived competition 1.21+</p> <p>6. Change priorities for QI (Ref., 1.89***, 1.67**, 0.84) initial quality 1.10+</p> <p>7. Invest in new technology of equipment: none (0.83, Ref., 1.63+, 0.43) for-profit 1.57+; initial quality 1.14+</p> <p>+p&lt;.10, *p&lt;.05, **p&lt;.01, ***p&lt;.001</p>	none	None	<p>Immediate response: more likely with higher perceived competition and less likely (38% reduction in odds) with for-profit status. Chain statUSA and initial quality had no impact.</p> <p>Poor quality and higher perceived competition associated with no action taken.</p> <p>Score are more likely to be explained in competitive markets and by chain NH.</p> <p>Facility with low initial scores were more likely to investigate reasons for scores and change QI program priorities.</p>	<p>Finding suggest if, when and how NHs respond to NH compare varies according to the strategic orientation of the NH. (Comparisons are to defenders) Compared to defenders, prospectors are 58 percent more likely to respond immediately.</p> <p>Defenders compared to prospectors were 62 percent more likely to take no action.</p> <p>No statistically significant difference was found in discussing scores with residents or family.</p> <p>Prospectors and Analyzers were more likely to investigate reasons for scores.</p> <p>Prospectors were twice as likely to revise job descriptions.</p> <p>Prospectors are twice as likely and Analyzers 67 percent more likely to change priorities of existing quality programs.</p> <p>No differences were found purchasing new technology or equipment.</p>	NIA Conflicts: Not Reported	

Author Year	11. Results: KQ1 (Health Care Outcomes)	12. Results: KQ2 (Harms)	13. Results: KQ3 (Provider Outcomes-QI and other behaviors)	14. Results KQ4: (Selection by Patients and Payers)	15. Results: KQ5 (Impact of Public Report Characteristics)	16. Results: KQ6 (Impact of Contextual Factors)	17. Summary/ Conclusion	18. Funder of Research/Report Article and Conflicts of Interest	19. Notes
Zinn 2010	none	none	Odd Ratio (se) QMs influence professional referrals a. Hired new Nursing Director 2.31 (.88)** b. Hired new Medical Director 2.64 (1.04)*** c. Hired more clinical staff 0.95 (0.30) d. Increased staff wages1.11 (0.33) e. other initiatives to hire/retain staff 1.86 (0.66)** f. Purchased new technology/equipment 2.54 (1.05)** QMs influence choice of facility a. Hired new Nursing Director 0.83 (0.31) b. Hired new Medical Director 0.66 (0.24) c. Hired more clinical staff 2.29 (0.75)*** d. Increased staff wages 1.23 (0.35) e. other initiatives to hire/retain staff 1.06 (0.40) f. Purchased new technology/equipment0.94 (0.39) QMs influence state survey process a. Hired new Nursing Director 1.87 (0.50)*** b. Hired new Medical Director 3.41 (1.31)**** c. Hired more clinical staff2.30 (0.72)**** d. Increased staff wages 1.44 (0.25)** e. other initiatives to hire/retain staff 1.33 (0.29) f. Purchased new technology/equipment 1.84 (0.54)** Have a Managed Care Contract a. Hired new Nursing Director 0.64 (0.17)* b. Hired new Medical Director 0.37 (0.16)*** c. Hired more clinical staff 0.67 (0.14)* d. Increased staff wages 0.71 (0.17) e. other initiatives to hire/retain staff 1.07 (0.43) f. Purchased new technology/equipment 0.92 (0.24) *p .10. **p .05. ***p .01. ****p .001	none	None	Interaction perceived level of competition (high/low) with quality (based on public reported scores).  Odds of taking action Low High SE quality quality  Hired new nursing director High competition 3.26* 1.0 1.81 Low competition 0.70 1.0 0.27 Hired new medical director High competition 1.34 1.0 0.86 Low competition 1.22 1.0 0.73 Hired more clinical staff High competition 1.18 1.0 0.38 Low competition 0.70 1.0 0.24 Increased staff wages High competition 3.13** 1.0 1.24 Low competition 0.93 1.0 0.24 Other initiatives to hire/retain staff High competition 2.95* 1.0 1.52 Low competition 1.06 1.0 0.35 Purchased new equipment/technology High competition 0.61 1.0 0.25 Low competition 1.80 1.0 0.86  *p < .05. **p < .01.	When administrators perceive that NH Compare influence professional referrals this increased their odds of hiring new nursing and medical directors, other initiatives to hire/retain staff and purchases of equipment or technology. Consumer choice being influential was only associated with hiring more staff. When administrators thought the staff survey process was influenced by NH Compare, the most actions were taken. In highly competitive markets, low quality NH are most likely to take action in response to NH Compare. Having a Managed care contract did reduce administrator likelihood of taking these actions.	NIA Conflicts: Not Reported	

# Appendix O. Long-Term Care: Qualitative Evidence

## Section A: Contains columns 1 through 8 of all long-term care qualitative evidence (O1: O4)

Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/Type	4. Sample/Population Procedure	5. Outcomes	6. Name of Public Report or Subject Matter	7. Results	8. Summary
Castle (a) 2009	To determine whether consumers use NH Compare and examine whether they can accurately interpret the quality measure information.	USA	Survey	200 Nursing Homes were randomly selected (hospital-based and those with less than 70 beds were excluded). Each of these NHs was asked to send a survey to a family member of people 60 or older admitted in the last 3 months until 40 surveys were mailed. The survey asked about internet use and included a paper version of a NH Compare web site and asked the respondents comprehension questions.  4754 out of 8000 surveys were returned (59%)	Use of NH Compare Scores on a comprehension index Individual and NH Characteristics associated with comprehension.	NH Compare	Reported Use of NH Compare % Yes (95% CI) Had someone supply NH info from internet 18 (8-20) Used internet to chose NH 31 (15-33) Used Medicare.gov 5 (4-6) Used NH Compare 12 (10-16) If internet used, how many times 3.3 (1.7-4.1) In internet used, how much time 54 minutes (35.68)  Mean comprehension score (maximum 8) Non risk adjusted quality measures: 5.56 Risk adjusted quality measures 5.32  Characteristics Significantly Associated with Comprehension (higher): Younger, Married, Higher education level, White, higher income, lower Medicaid Occupancy for NH Characteristics NOT Significantly Associated with Comprehension (higher): Gender, Internet access, NH size, NH ownership, chain, occupancy rate.	Approximately 1/3 of family members of people admitted to NHs used NH Compare and comprehension scores were high.
Castle (b) 2009	To determine the extent to which consumers use nursing home report card and they use the information	NH: US Assisted Living: PA Community/Senior Housing: PA	Survey	Survey 1: 8000 family members of residents admitted in past 3 months from 200 randomly selected NH in US (this is the same survey used in Castle (a), 2009) Survey 2: 809 family members of residents admitted in the past 2 years in 25 randomly selected AL in PA Survey 3: 2000 elders living in 25 randomly selected elderly high-rise housing.  Survey 1: 4754 responses (59%) Survey 2: 496 responses (61%) Survey 3: 1252 responses (63%)	Use of internet Looked at report cards Purchased a report card Used Medicare.gov or NH Compare in looking for a Nursing Home Intended and Actual uses of report cards	any (NH Compare, state reports)	(Percentages are for Sample 1, 2, 3) Use of Report Cards:* Used the Internet at any time in looking for a nursing home 31% 53% 23% Looked at a report card on nursing homes 29% 47% 15% Looked at more than one type of report card on nursing homes 7% 11% 2% Purchased a report card on nursing homes from a Web site 1% 4% 0% Used Medicare.gov Web site in looking for a nursing home 5% 9% 13% Used the Nursing Home Compare Web site in looking for a nursing home 12% 17% 6%  Actual Primary Use of Report Card: Find location of nursing homes 39% 37% 35% Examine quality information of nursing homes 32% 36% 29% Examine quality-of-life information of nursing homes 2% 4% 5% Examine amenities of nursing homes 6% 7% 5% Find cost/charges information of nursing homes 2% 1% 1% Examine general characteristics of nursing homes 14% 15% 21%	Using of internet and access to web-based report cards appear high though it is not compared to any standard. Between 23 % and 53% of respondents used internet to look for NH information and most of these used a report card. The most frequent actual use of the report cards is to find the location (35% to 49%). Actual examining quality information (29% to 47%).

Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/Type	4. Sample/Population Procedure	5. Outcomes	6. Name of Public Report or Subject Matter	7. Results	8. Summary
Castle 2005	To describe nursing home administrators opinions about NH Compare	4 states, MD, CT, PA and TN	Survey	<p>A 30% random sample of NH Administrations in 2 states without a state NH report card prior to NH Compare (MD and PA) and two states that had a state nursing home report card (CT and TN). Conducted in January 2003.</p> <p>324 completed out of 477 mailed (68% response)</p>	<p>Responses to survey items on their own and their opinion about consumers' perspectives:</p> <p>Use of NH Compare</p> <p>NH Compare Content</p> <p>Comprehension</p> <p>Navigation</p> <p>Decision Process</p>	NH Compare	<p>Use of NH Compare</p> <p>33% have used NHC information in facility</p> <p>51% Plan to use NHC information in the future</p> <p>11% Ever used other NH report cards</p> <p>Mean (SD) 1 to 10 with 10 most positive rating</p> <p>MD and PA, CT and TN, Total Sample</p> <p>Administrators' opinion</p> <p>Administrators' opinion about consumers' perspective</p> <p>Content</p> <p>Relevant 7.4 (2.8), 6.2 (3.1)*, 6.9 (2.9)</p> <p>Relevant 6.2 (3.0) 5.7 (2.8) 6.0 (2.8)</p> <p>Complete 6.3 (2.9) 7.9 (2.7)* 7.1 (2.8)</p> <p>Complete 4.9 (3.3) 4.7 (2.9) 4.8 (3.2)</p> <p>Unnecessary information 4.1 (3.4) 4.7 (3.3) 4.3 (3.3)</p> <p>Unnecessary information 3.6 (2.1) 4.2 (3.2)* 3.8 (2.5)</p> <p>Comprehension</p> <p>Easy to understand 8.7 (1.9) 8.5 (2.0) 8.6 (2.0)</p> <p>Easy to understand 6.5 (3.2) 6.2 (3.4) 6.4 (3.2)</p> <p>How much understood 8.5 (2.2) 8.2 (2.0) 8.4 (2.1)</p> <p>How much understood 5.2 (2.8) 5.8 (3.0)* 5.4 (2.9)</p> <p>Navigation</p> <p>Easy to explore 8.2 (2.1) 8.0 (2.4) 8.1 (2.3)</p> <p>Easy to explore 6.0 (3.1) 6.4 (2.6) 6.1 (2.9)</p> <p>Easy to find what you needed 8.4 (2.0) 7.5 (2.6)* 8.2 (2.1)</p> <p>Easy to find what you needed 7.7 (2.1) 7.2 (2.4)* 7.5 (2.2)</p> <p>Helps with interpreting information 7.9 (2.1) 8.2 (2.5) 8.0 (2.2)</p> <p>Helps with interpreting information 7.4 (2.2) 7.0 (2.4) 7.2 (2.2)</p> <p>Decision Process</p> <p>Helpful in choosing NH 7.1 (2.2) 6.7 (2.5) 6.9 (2.3)</p> <p>Helpful in choosing NH 6.7 (2.4) 6.3 (2.3) 6.5 (2.3)</p> <p>Helpful in choosing your facility 5.6 (2.7) 6.3 (3.2)* 5.8 (2.8)</p> <p>Helpful in choosing your facility 5.6 (2.7) 6.3 (3.2)* 5.8 (2.8)</p> <p>Help you be more confident in choosing 6.4 (2.3) 6.2 (3.0) 6.3 (2.5)</p> <p>Help you be more confident in choosing 5.7 (2.4) 6.4 (3.1)* 5.9 (2.8)</p> <p>* difference between prior report card and no prior report card significant at p&lt;.05</p>	Administrators' ratings of NH Compare were relatively high for themselves and lower for residents/families. Most ratings were not statistically different for 2 states with prior NH report card then for 2 states without prior NH report cards.



Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/Type	4. Sample/Population Procedure	5. Outcomes	6. Name of Public Report or Subject Matter	7. Results	8. Summary
Gerteis 2007	To test different display formats for NH Compare information	Boston, MA and McLean, VA	Lab-type Experiment	90 volunteers between 45 and 75 years old. Selected to be representative of family caregivers of people needing nursing home care.  During an in-person interview, participants were shown 7 different formats for the data for 5 NH Compare Quality Measures for 10 NHs. The order was varied for each participant to avoid order effects.	Comprehension of Terms Ability to identify the NH with better performance Reasons for Errors Preference for formats	NH Compare	For each Template Percent of all errors, correct interpretations, preferred by respondents, easiest to use  Evaluative Table with Stars 7.7, 86, 19, 22 Evaluative Table with 3 Symbols 12.1, 76, 6, 11 Evaluative Table with words 6.6, 89, 21, 30 Numeric Table with Percentages only 13.2, 76, 11, 3 Numeric Table with Stars 13.7, 73, 21, 13 Standard Bar Graph 29.7, 47, 16, 6 Bar Graph with Line 17.0, 72, 16, 14	Based on results an Evaluative Table with Words or Stars is preferred to a bar graph. A major barrier to understanding is the use of a negative direction (lower numbers are better) that people find confusing in spite of the directions. People prefer to be able to compare several NHs on one page.
Mukamel 2007	To examine the initial reactions of nursing home administrators to NHC in terms of their view of the measures and actions in response.	USA	Survey	10% sample of all US Medicare and Medicaid certified NH. Surveys sent to 1502, 724 responded (42%) in May and June of 2004	Awareness of NH Compare Assessment of NH Compare Actions taken in Response to NH Compare	NH Compare	Actions reported taken in response to poor NH Compare scores Facilities That Implemented Action (%), # Poor Scores for NH that implemented action, # Poor Scores for NH that did not implemented action, Initiation of quality-improvement activities Investigated reasons for scores 63.3 1.90* 1.60* Changed priorities of existing quality-assurance or quality-improvement program to focus on QMs 41.6 1.92 1.67 Requested help from the Quality Improvement Organization 21.1 1.91 1.76 Started an organized quality-improvement program 17.8 2.01 1.73 Changes in protocols and work organization Changed existing care protocols 36.3 1.94 1.70 Trained staff specifically for targeted QM 36.3 2.06** 1.65** Developed new care protocols 28.9 1.91 1.75 Changed work organization to empower workers 19.0 2.20** 1.70** Revised job descriptions 11.6 2.06 1.75 Changes in resources Purchased new technology or equipment 13.7 1.97 1.76 Hired more staff 9.6 1.98 1.78 Reallocated staff from other activities to care related to QM 9.4 1.97 1.76 Increased wages/benefits 8.9 2.19 1.76 Other initiatives to hire or retain staff 7.8 1.80 1.78 Contracted for more staff 1.7 2.00 1.76 Changes in leadership Changed nursing director 4.6 2.13 1.78 Changed ownership 0.6 1.75 1.76 Changed medical director 0.3 4.50** 1.75** Communication with customers Explained scores to patients and families 27.0 1.87 1.75 Other activities Increased private-pay prices 4.0 1.96 1.75 Changed the type of patient admitted 3.6 1.72 1.76 Other 1.6 2.55 1.75d .* p<.10; ** p<.05	Most NH are acting on the NH Compare information in ways that could lead to improvement. The motivation seems greater for NH with lower reported quality (in the bottom 20% for state).

Author Year	1. Study Purpose	2. Geographic Location (e.g., New York, USA, etc.)	3. Study Design/Type	4. Sample/Population Procedure	5. Outcomes	6. Name of Public Report or Subject Matter	7. Results	8. Summary
Van Nie 2010	To test an internet report card about nursing homes that contains quality indicators, consumer satisfaction and quality of care.	Netherlands	Lab-type Experiment	<p>3 Convenience samples</p> <p>#1 Members of a panel from a Dutch consumer-of-care organization predominately for nursing homes and home care. (300 invited, 181 participated--63%)</p> <p>#2 University students in health sciences (42 invited, 38 participated--91%)</p> <p>#3 Representatives of nursing homes including managers, quality coordinators and staff. (70 invited, 59 participated-66%).</p> <p>Participants were recruited by mail or in person. They were presented with a training case and randomly assigned six cases that differed on one aspect of the report card. Participants read the case, looked at the hypothetical report card, and then answered questions about the quality of the nursing home, whether they would choose and about the report card content and format.</p>	<p>General Assessment of Report Card</p> <p>1. Aspect of Card Most Important for Quality Assessment</p> <p>2. Quality Assessments of NH</p> <p>3. Associated with Variations in the Report Card</p>	Hypothetical report cards on Nursing Homes	<p>Aspect of card most important for quality assessment (% of respondents selecting response, multiple responses possible)</p> <p>Results of the annual measurement of quality indicators (15%)</p> <p>Assessment of consumers' satisfaction (63%)</p> <p>Assessments of quality of care by Government Agency (39%)</p> <p>Additional information (such as certification) (9%)</p> <p>No opinion (8%)</p> <p>Symbols presenting data of assessment of quality of care by NHC</p> <p>Warning triangle (50%)</p> <p>Stars (35%)</p> <p>Colors (11%)</p> <p>Other (4%)</p> <p>Report Card Characteristics that resulted in higher overall quality ratings, willing to chose and willing to recommend (p&lt;.0001)</p> <p>A. Positive annual measurements</p> <p>B. Positive government assessments</p> <p>C. All information present (as opposed to listed as missing)</p> <p>Characteristics that did not result in significantly lower overall quality ratings</p> <p>A and B Missing only one of annual measurement or government assessment</p> <p>C. Statement that NH has been placed under supervision.</p>	<p>General</p> <p>Overall rating of the internet report card were high (7.1 out of 10) and did not differ across the samples (p=0.33). On specific aspects of the report card, care consumers rated it lower on completeness and understandable (p=0.01). Ranking of Content</p> <p>When asked to rate the sections of the report card all groups prioritized consumers' satisfaction, followed by information provided by the government agency based on visits, with quality of care indicators lower.</p> <p>Format</p> <p>Respondents preferred the use of warning triangles to stars or colors to indicate issues with the government survey.</p> <p>Respondents rated NHs better when the information provided was positive. Missing information was interpreted as lower quality.</p> <p>Asked about what else should be included respondents as for more information about the opinions of relatives, informal care givers and volunteers. A majority also asked for more explanation of the terms used in the report.</p>

## Appendix P. Strength of Evidence

Key Question 1						
	Outcome	Risk of Bias	Consistency	Directness	Precision	Overall Strength of Evidence
<b>Hospitals</b>	Mortality	Medium	Inconsistent	Direct	Imprecise	Low
	Process Measures	Medium	Consistent	Direct	Imprecise	Moderate
<b>Individual providers</b>	Mortality	-	-	-	-	Insufficient
<b>Health Plan</b>	CAHPS and HEDIS	High	Consistent	Indirect	Precise	Low
<b>Long term care</b>	Quality Measures	Medium	Consistent	Direct	Imprecise	Moderate
<b>Key Question 2:</b>						
<b>Hospitals</b>	Inappropriate diagnosis and treatment	-	-	-	-	Insufficient
	Mortality	-	-	-	-	Insufficient
	Access	Medium	Inconsistent	Indirect	Imprecise	Low
<b>Individual Providers</b>	Disparities	-	-	-	-	Insufficient
	Adverse Selection	-	-	-	-	Insufficient
	Surgeon drop out	-	-	-	-	Insufficient
<b>Health Plans</b>	Crowding out	-	-	-	-	Insufficient
	Withdrawal from Market	-	-	-	-	Insufficient
<b>Long term care</b>	Cream skinning	-	-	-	-	Insufficient
	Crowd out	-	-	-	-	Insufficient
<b>Key Question 3:</b>						
<b>Hospitals</b>	Quality Improvement	-	-	-	-	Insufficient
<b>Individual Providers</b>	Low quality surgeons leave practice	-	-	-	-	Insufficient
<b>Health Plans</b>						No studies
<b>Long term Care</b>	Administrator response	Low	Consistent	Indirect	Precise or NA	Moderate
	Influenza Vaccination	-	-	-	-	Insufficient
<b>Key Question 4:</b>						
<b>Hospitals</b>	Volume and Market Share	Medium	Consistent	Indirect	Imprecise	Moderate
<b>Individual Providers</b>	Referral Patterns, Market Share, Volume	Medium	Consistent	Indirect	Imprecise	Low
<b>Health Plans</b>	Selection	Medium	Consistent	Direct	Imprecise	Moderate
<b>Long term care</b>	Occupancy Rate	-	-	-	-	Insufficient
<b>Key Question 5:</b>						
<b>Hospitals</b>						No Studies
<b>Individual Providers</b>	Mode and tone of message	-	-	-	-	Insufficient
	Accuracy and usefulness	-	-	-	-	Insufficient

<b>Health Plans</b>						No Studies
<b>Long term care</b>						No Studies
<b>Key Question 6:</b>						
<b>Hospitals</b>	Competition					Insufficient
<b>Individual Providers</b>	Employment status/age	-	-	-	-	Insufficient
	Mandated Insurance Coverage	-	-	-	-	Insufficient
<b>Health Plans</b>	Importance of information					Insufficient
	Baseline performance					Insufficient
	Variation in quality					Insufficient
<b>Long term care</b>	Competition/occupancy	Medium	Consistent	Direct	Imprecise	Low
	Nursing home characteristic	Medium	Inconsistent	Indirect	Imprecise	Low
	Baseline Performance	-	-	-	-	Insufficient